

Savannah High School  
School of Liberal Studies  
Exterior Building Repairs  
400 Pennsylvania Avenue, Savannah Georgia

Savannah Chatham County Public School System  
Savannah, GA



June 2017

Division	Section Title
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**PROCUREMENT DOCUMENTS GROUP**

**DIVISION 00 - PROCUREMENT REQUIREMENTS**

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000150	ACCEPTANCE CERTIFICATION
000170	CONTRACTOR'S GENERAL WARRANTY
000180	ASBESTOS FREE WARRANTY

**SPECIFICATIONS GROUP**

*General Requirements Subgroup  
(Division 01 provided by SCCPSS)*

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END

**SECTION 00 01 40 – SCHEDULE OF NOTIFICATIONS**

*The Contractor shall notify the Owner and Architect when particular milestones of construction have been achieved. The intent is to allow the Owner and Architect to visit the site and observe the progress of the Work before subsequent work limits the ability to view preceding work. The following list of Notifications is provided as an aid, and is not necessarily inclusive of all required Notifications required for this Project. Contractor shall be responsible for identifying and making all necessary Notifications in accordance with the Contract in a timely manner to allow receipt of comments and/or approvals prior to proceeding with construction.*

Date of Schedule Submittal: \_\_\_\_\_

Contractor: \_\_\_\_\_

Description of Notification	Notification Date
<b>Product Submittals</b> .....	_____
Prior to Mockups	
<b>Mockups</b> .....	_____
Prior to Start of Work.	
<b>Substantial Completion</b> .....	_____
Prior to Final Completion.	
<b>Final Completion</b> .....	_____
Prior to request for Certificate of Completion.	

**END OF SECTION 00 01 40**

**SECTION 00 01 50 – ACCEPTANCE CERTIFICATION**

1.1 Project: \_\_\_\_\_

A. Project Address: \_\_\_\_\_

B. Material and/or Product: \_\_\_\_\_

C. Project Specification Section: \_\_\_\_\_

1.2 General Contractor:

A. Company Name: \_\_\_\_\_

B. Company Representative's Name \_\_\_\_\_:

C. Signature and Date: \_\_\_\_\_

1.3 Subcontractor / Installer:

A. Company Name: \_\_\_\_\_

B. Company Representative's Name \_\_\_\_\_:

C. Signature and Date: \_\_\_\_\_

1.4 Material and/or Product Manufacturer:

A. Company Name: \_\_\_\_\_

B. Company Representative's Name \_\_\_\_\_:

C. Signature and Date: \_\_\_\_\_

1.5 I have fully examined and understand the drawings and specifications, (and the site conditions if necessary), which are relevant to this work. To the best of my ability and knowledge, I believe the material/products herein submitted are in full compliance with the drawings and specifications. Further, I have confirmed that the site conditions and the material/products herein submitted comply with requirements for installation tolerances, applicable codes, and other conditions affecting performance of this material/product and its incorporation into the work.

1.6 Attached are any conditions detrimental to the performance of this material/product and its incorporation into the work. Also attached are any requirements or provisions of the drawings and specifications which in my opinion are inconsistent, incompatible, or otherwise inappropriate for the performance of this material/product and its incorporation into the work. If there are no comments attached, or if this form is not submitted, then the General Contractor accepts responsibility for the statement in paragraph 1 above.

END OF SECTION 00 01 50

SECTION 00 01 70 – CONTRACTOR'S GENERAL WARRANTY

At Substantial Completion, the Contractor shall provide this document.

The undersigned Contractor hereby warrants, in accordance with the applicable provisions and terms set forth in the Contract Documents, all materials and workmanship incorporated into this Project against any and all defects due to faulty materials or workmanship or negligence for a period of **12 months**, or such longer periods as set forth in the Contract Documents, from the effective date of Substantial Completion.

This Warranty shall be binding where defects occur due to normal usage conditions and does not cover willful or malicious damage, damage caused by acts of God or other casualty beyond the control of the Contractor.

This Warranty shall be in addition to other warranties and guarantees set forth in the Contract Documents, and shall not act to constitute a waiver of additional protection of the Owner afforded, where applicable, by consumer protection and product liability provisions of law, and these stipulations shall not constitute waiver of any additional rights or remedies available to the Owner under the law.

Signature: \_\_\_\_\_

Name:

Title:

Date:

Corporate Seal:

Subscribed and sworn before me this

\_\_\_\_\_ day of \_\_\_\_\_, 2017

\_\_\_\_\_  
(Notary Public)

END OF SECTION 00 01 70

SECTION 00 01 80 – ASBESTOS FREE WARRANTY

- 1.1 At Substantial Completion, the contractor shall provide this document.
  
- 1.2 Project:
  - A. Project Address:
  
- 1.3 Contractor:
  - A. Representative:
  - B. Signature:
  - C. Title:
  - D. Date:
  - E. Corporate Seal:
  
- 1.4 The Contractor hereby warrants that no asbestos-containing materials of any kind were used in the construction of this Project.

Subscribed and sworn before me this

\_\_\_\_\_ day of \_\_\_\_\_, 2016

\_\_\_\_\_  
(Notary Public)

END OF SECTION 00 01 80

**SECTION 01 10 00 – SUMMARY OF WORK**

**PART 1 - GENERAL**

**A. This Section includes the following:**

- 1.1 Work under other contracts
- 1.2 Owner's occupancy requirements
- 1.3 Work restrictions

**B. Stipulation Regarding Specifications:**

All provisions in these Sections 01 21 00, 01 22 00, 01 26 00, 01 29 00, 01 31 00, 01 32 00, 01 32 33, 01 33 00, 01 40 00, 01 50 00, 01 60 00, 01 73 00, 01 73 29, 01 74 19, 01 77 00, 01 78 23, and 01 78 39 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(s):** As applicable, maintain existing building(s) 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:

**1.2 OWNER'S OCCUPANCY REQUIREMENTS**

**1.2.1 Owner Occupancy of Completed Areas of Construction:**

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. Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of building.

**1.3 WORK RESTRICTIONS**

1.3.1 Work can be performed 24 hours per day (including Saturdays and Sundays) during the 'limited-access' period, as well during the 'open-access' period and shall be coordinated with the work areas identified below, (at no time shall contractors be allowed to work during scheduled testing hours for the students):

- a. Limited access period: Contractor to refrain from disruptive work during school hours.
- b. General work access: Contractor shall coordinate work hours with SCCPSS prior to commencement of scheduled work.
- c. Hours for utility shutdowns: as authorized in advance by the Design Professional, and as limited by regulations and by authorities having jurisdiction.



- 1.3.2 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.
- 1.3.3 Tobacco Products are prohibited and not permitted on Board property.
- 1.3.4 Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated. Notify Design Professional, and Owner, not less than 72 hours in advance of proposed utility interruptions. Proceed only with Design Professional's, and Owner's, written permission and only with all written authorizations including permits that may be required by authorities having jurisdiction.

END OF SECTION 01100

SECTION 01 26 00 - 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, 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 in 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 Requests: The Design Professional (or Owner) may issue a, 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

- B. 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.
- C. 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.
- D. 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 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 thru 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 01 26 00

SECTION 01 29 00 - 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 MFBE Monthly Report Forms provided in the Bidding Documents
3. Application for Payment at Material Completion and Final Payment:

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01290

SECTION 01 31 00 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. 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 of solely 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.
  - 3. Number of Copies: Submit two opaque 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 be responsible to 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 reinstallation conference at Project site before each

construction activity that requires coordination with other construction. Hold reinstallation 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 two 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 thru 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 01 31 00

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.

1.2 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
  - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
  - 2. Predecessor Activity: An activity that precedes another activity in the network.
  - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- D. Float: The measure of leeway in starting and completing an activity.
  - 1. Float time 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 60 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.
- B. Contractor's Construction Schedule : Submit two copies of initial schedule, large enough to show entire schedule for entire construction period.
- C. 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 then 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.
- D. Daily Construction Reports: Submit one copy of daily construction reports, accompanied by corresponding photographs, at weekly intervals.
- E. 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.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
  - 1. Secure time commitments for performing critical elements of the Work from parties involved.
  - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. 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 story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
  - 1. Activity Duration: Define activities so no activity is longer than 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. **Startup and Testing Time:** Include not less than 21 days for startup and testing.
  - 5. **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.
- C. **Constraints:** Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
- 1. **Phasing:** Arrange list of activities on schedule by phase.
  - 2. **Work by Owner:** Include a separate activity for each portion of the Work performed by Owner.
  - 3. **Work Restrictions:** Show the effect of the following items on the schedule:
    - a. Use of premises restrictions.
    - b. Seasonal variations.
    - c. Environmental control.
  - 4. **Work Stages:** Indicate important stages of construction for each major portion of the Work.
- D. **Milestones:** Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the 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
  - 2. Dry-in, roof
  - 3. Dry-in, walls
  - 4. Permanent power
  - 5. Start-up dates for primary systems and equipment
  - 6. Interim commissioning dates for systems and equipment which are relied upon by other systems or equipment
  - 7. Permanent lighting
  - 8. Moderation and control of interior climate
  - 9. Milestone dates relating to Furniture, Fixtures, and Equipment
  - 10. 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.
  7. Meter readings and similar recordings.
  8. Orders and requests of authorities having jurisdiction.
  9. Services connected and disconnected.
  10. Equipment or system tests and startups.
- B. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with 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 01320

**SECTION 01 33 00 - 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 demonstrate 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 demonstrate 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, 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 different type submittals together when such 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 of 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.
- F. Format: Submittals shall be sent to the Design Professional in PDF format (unless three full size paper copies, or finish color samples, are required by the Design Professional).
- G. 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 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. Consolidate these to the greatest extent possible, taking care however 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. Wiring diagrams showing factory-installed wiring.
    - f. Printed performance curves.
    - g. Operational range diagrams.
    - h. Compliance with specified referenced standards.
    - i. Testing by recognized testing agency.
- 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. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shopwork manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Notation of coordination requirements.
    - j. Notation of dimensions established by field measurement.
    - k. Relationship to adjoining construction clearly indicated.

1. Seal and signature of professional engineer if specified.
  - m. Wiring Diagrams: Differentiate between manufacturer and field-installed wiring.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  2. Identification: Attach label on unexposed side of Samples that includes the following:
    - a. Generic description of Sample.
    - b. Product name and name of manufacturer.
    - c. Sample source.
    - d. Number and title of appropriate Specification Section.
  3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
  4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
    - a. Number of Samples: Submit no fewer than five full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Design Professional will retain three and will return the remaining submittal(s) with options selected.
  5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
    - a. Number of Samples: Submit no fewer than four sets of Samples. Design Professional will retain three Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
- E. 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.
- 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/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. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project.
- M. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing



agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.

- N. **Compatibility Test Reports:** Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
  - O. **Field Test Reports:** Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
  - P. **Maintenance Data:** Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
  - Q. **Design Data:** Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
  - R. **Manufacturer's Instructions:** Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.
  - S. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
    - 1. Statement on condition of substrates and their acceptability for installation of product.
    - 2. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
    - 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - T. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
  - U. **Material Safety Data Sheets (MSDSs):** Submit information directly to Owner; do not submit to Design Professional.
    - 1. Design Professional will not review submittals that include MSDSs and will return them for re-submittal.
- 2.3 **DELEGATED DESIGN**
- A. **Performance and Design Criteria:** Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
    - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Design Professional.

- B. **Delegated-Design Submittal:** In addition to Shop Drawings, Product Data, and other required submittals, submit copies of a statement, in a count no fewer than that of the shop drawing or other type submittal to which it is in relation, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

**PART 3 - EXECUTION**

**3.1 CONTRACTOR'S REVIEW**

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 01330

SECTION 01 40 00 - 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. Laboratory Mockups: Full-size, physical assemblies that are constructed at testing facility to verify performance characteristics.
  
- E. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
  
- F. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to

- G. establish product performance and compliance with industry standards.
- G. Source Quality-Control Testing: Tests and inspections that are performed at the source, i.e., plant, mill, factory, or shop.
- H. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- I. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- J. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
  - 1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.
- K. 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.
- B. Reports: Prepare and submit certified written reports that include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, and telephone number of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.
  - 6. Description of the Work and test and inspection method.
  - 7. Identification of product and Specification Section.
  - 8. Complete test or inspection data.
  - 9. Test and inspection results and an interpretation of test results.

10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and 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 01400



**SECTION 01 50 00 - 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.
- A. See Division 01 Section "Execution" for progress cleaning requirements.
- B. See Divisions 02 through 33 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.
- C. Failure on the part of the Contractor to establish and maintain all required on-site communication and clerical provisions may be cited as cause to return Applications for Payment without action.

**1.2 DEFINITIONS**

- A. Permanent Enclosure: As determined by Design Professional, permanent or temporary roofing is complete, insulated, and weather-tight; exterior walls are insulated and weather-tight; and all openings are closed with permanent construction or substantial temporary closures.

**1.3 USE CHARGES**

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, 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. Pavement: Comply with Division 02 pavement Sections.
- B. Chain-Link Fencing: Minimum 2-inch, 0.148-inch thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top rails and galvanized barbed-wire top strand.
- C. 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.
- D. Lumber and Plywood: Comply with requirements in Division 06 Section "Rough Carpentry."
- E. Gypsum Board: Minimum 1/2 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.
- F. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
- G. 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.
- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system; provide climate control units with individual space thermostatic control.
  - 1. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
  - 2. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return air grille in system and remove at end of construction.

**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, and to limit site disturbance as required to attain LEED-NC Credit SS 5.1, and as specified in Division 01 Section "Summary." Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
  - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.
- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- G. 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.
- H. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
  - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- I. 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.

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

J. **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.

B. **Temporary Roads and Paved Areas:** Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas within construction limits indicated on Drawings.

1. Provide dust-control treatment that is nonpolluting and non-tracking. Reapply treatment as required to minimize dust.

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:** Provide temporary parking areas for construction personnel.

E. **Dewatering Facilities and Drains:** Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties nor endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

F. **Project Identification and Temporary Signs:** Provide Project identification and other signs as a part of Allowance No. Four. Install 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.

G. **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.

H. **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.

I. **Temporary Elevator Use:** Refer to Division 14 Sections for temporary use of new elevators.

J. **Temporary Stairs:** Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

- K. Temporary Use of Permanent Stairs: Cover finished 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.
- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- C. Storm water Control: Comply with authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rains.
- D. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- E. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Material Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.
- F. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
  - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
  - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Provide Owner and Design Professional with one set of keys.
- G. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- H. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- I. 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.
  - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- K. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with

NFPA 241.

1. Prohibit smoking and use of all tobacco products on SCCPSS property
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

**3.5 OPERATION, TERMINATION, AND REMOVAL**

- A. **Supervision:** Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. **Maintenance:** Maintain facilities in good operating condition until removal.
  1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. **Temporary Facility Changeover:** Do not change over from using temporary security and protection facilities to permanent facilities until 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 01500

**SECTION 01 60 00 - 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. **Available Products:** Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements, as determined by the Design Professional. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
  - 4. **Available Manufacturers:** Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements, as determined by the Design Professional. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
  - 5. **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.
  - 6. **Basis-of-Design Product:** Where Specifications name a product and include a list of

manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.

7. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Design Professional's sample. Design Professional's decision will be final on whether a proposed product matches.
  - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
8. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, and textures" or a similar phrase, select a product that complies with other specified requirements.
  - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Design Professional will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
  - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Design Professional will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 PRODUCT SUBSTITUTIONS

- A. Timing: 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.
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 01 60 00

SECTION 01 73 00 - EXECUTION

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 SUBMITTALS

- A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.
  
- B. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal, if any.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  - 1. Before construction, verify the location and points of connection of utility services.
  
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
  
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances

and other conditions affecting performance. Record observations.

1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. **Existing Utility Information:** Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. **Field Measurements:** Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. **Space Requirements:** Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. **Review of Contract Documents and Field Conditions:** Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Design Professional. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

### 3.3 CONSTRUCTION LAYOUT

- A. **Verification:** Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Design Professional promptly.
- B. **General:**
  1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  3. Inform installers of lines and levels to which they must comply.
  4. Check the location, level and plumb, of every major element as the Work progresses.
  5. Notify Design Professional when deviations from required lines and levels exceed allowable tolerances.

### 3.4 FIELD ENGINEERING

- A. **Reference Points:** Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

**3.5 INSTALLATION**

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until 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.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Design Professional.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

**3.6 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.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Material Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at 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. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

**3.8 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 01 73 00

**SECTION 01 73 29 - CUTTING AND PATCHING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. This Section includes procedural requirements for cutting and patching.
- B. See Divisions 2 through 33 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

**1.2 SUBMITTALS**

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
  - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  - 3. Products: List products to be used and firms or entities that will perform the Work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
  - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
  - 7. Design Professional's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

**1.3 QUALITY ASSURANCE**

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Design Professional's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.4 WARRANTY

- A. Existing and Projected Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties, or warranties that are set to commence with Material Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
  - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not

- hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. **Finished Surfaces:** Cut or drill from the exposed or finished side into concealed surfaces.
  3. **Concrete and Masonry:** Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. **Excavating and Backfilling:** Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
  5. **Mechanical and Electrical Services:** Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- C. **Patching:** Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. **Inspection:** Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. **Exposed Finishes:** Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
  3. **Floors and Walls:** Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
  4. **Ceilings:** Patch, repair, or re-hang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. **Exterior Building Enclosure:** Patch components in a manner that restores enclosure to a weather tight condition.
- D. **Cleaning:** Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.
- E. **Fire rated assemblies:** verify existence of any rated assemblies. Any cutting, patching and penetrations shall be in accord with fire rating, and UL tested assembly.

END OF SECTION 01 73 29

**SECTION 01 74 19 - 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 for disposition of waste resulting from demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.

**1.2 DEFINITIONS**

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. 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.

**1.4 WASTE MANAGEMENT PLAN**

- A. General: Develop plan consisting of waste identification and waste reduction work plan. Include separate sections in plan for demolition and construction waste. 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.

**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. Disposal of Loose Items Inside Existing Building: Except for items or materials to be salvaged, recycled, or otherwise reused, any of which would be at the Owner's discretion, remove from the Project site all loose items inside the building and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
- C. 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.

**3.2 SALVAGING DEMOLITION WASTE**

- A. Salvaged Items for Reuse in the Work:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until installation.
  - 4. Protect items from damage during transport and storage.
  - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for Sale or Donation: Not permitted on Project site.
- C. Salvaged Items for Owner's Use:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers.
  - 3. Store items in a secure area until delivery to Owner.
  - 4. Transport items to Owner's storage area [on-site] [off-site] [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.
- B. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.
1. Clean Gypsum Board: Grind scraps of clean gypsum board using small mobile chipper or hammer mill. Screen out paper after grinding.
  2. Ground and screened gypsum materials may be used as landscaping substrate, at Contractor's option.
- 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 01 74 19

## SECTION 07 9200 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: Urethane joint sealants.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Samples: For each kind and color of joint sealant required.
- C. Sealant Schedule: indicating type of sealant to be used in the different applications.
- D. Acceptance Certification.

#### 1.3 INFORMATIONAL SUBMITTALS

- A. Product test reports.
- B. Sample warranties.
- C. Field-adhesion-test reports.

#### 1.4 QUALITY ASSURANCE

- A. Testing Agency Qualifications: ASTM C 1021 to conduct the testing indicated.
- B. Sealant shall be compatible with new acrylic coating, see EIFS specifications.
- C. Preconstruction Field-Adhesion Testing: Before installing sealants, the manufacturer and/or distributor (or third party testing firm) shall field test the adhesion to joint substrates and adjacent materials (new and existing materials). Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
- D. Contractor shall provide a full mock-up, on site, on existing coping, using approved color, for approval prior to start of work. If approved, the mock-up may become part of the finished work.

#### 1.5 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.



**SECTION 01 77 00 - 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 "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.
- G. See Divisions 02 through 33 Sections specific closeout and special cleaning requirements for the Work in those Sections.

**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 and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  - 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
  - 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  - 7. Make final changeover of permanent locks and deliver keys to Owner. Transmit keys with a detailed accounting of the keys transmitted, and garner the receipt signature of an authorized representative of the Owner. Advise Owner's personnel of changeover in security provisions.
  - 8. Complete startup testing of systems.
  - 9. Submit test/adjust/balance records.
  - 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  - 11. Advise Owner of changeover in heat and other utilities.
  - 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  - 13. Complete final cleaning requirements, including touchup painting.

14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for 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.
4. Submit pest-control final inspection report and warranty.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training DVDs.

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 major element, including categories for ceiling, individual walls, floors, equipment, and building systems.

**1.5 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.
  
- B. Provide additional copies of each warranty to include in operation and maintenance manuals.

**PART 2 - PRODUCTS**

**2.1 MATERIALS**

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

**PART 3 - EXECUTION**

**3.1 FINAL CLEANING**

- A. **General:** Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
  
- B. **Cleaning:** Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  - 1. Complete the following cleaning operations before requesting inspection for certification of 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. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition,

- free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - h. Sweep concrete floors broom clean in unoccupied spaces.
  - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
  - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - k. Remove labels that are not permanent.
  - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  - m. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - n. Replace parts subject to unusual operating conditions.
  - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - p. Replace disposable air filters and clean permanent air filters and clean exposed surfaces of diffusers, registers, and grills.
  - q. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - r. Leave Project clean and ready for occupancy.
- C. **Pest Control:** Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- 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 01 77 00

**SECTION 01 78 23 - 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. Emergency procedure manuals.
  - 2. Operation manuals for systems, subsystems, and equipment.
  - 3. Maintenance manuals for the care and maintenance of products, materials, and finishes systems and equipment.
- 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: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
  - 1. Subject matter included in manual.
  - 2. Name and address of Project.
  - 3. Name and address of Owner.
  - 4. Date of submittal.
  - 5. Name, address, and telephone number of Contractor.
  - 6. Name and address of Design Professional.
  - 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
  - 1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.

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

**2.2 EMERGENCY PROCEDURE MANUALS**

- A. Content: Organize manual into a separate section for type of emergency, emergency instructions, and emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component for fire, flood, gas leak, water leak, power failure, water outage, equipment failure, and chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
- D. Emergency Procedures: Include instructions on stopping, shutdown instructions for each type of emergency, operating instructions for conditions outside normal operating limits, and required sequences for electric or electronic systems.

**2.3 OPERATION MANUALS**

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
- B. Descriptions: Include the following:
  1. Product name and model number.
  2. Manufacturer's name.
  3. Equipment identification with serial number of each component.
  4. Equipment function.
  5. Operating characteristics.
  6. Limiting conditions.
  7. Performance curves.
  8. Engineering data and tests.
  9. Complete nomenclature and number of replacement parts.

- C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal

shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.

- D. **Systems and Equipment Controls:** Describe the sequence of operation, and diagram controls as installed.
- E. **Piped Systems:** Diagram piping as installed, and identify color-coding where required for identification.

#### 2.4 PRODUCT MAINTENANCE MANUAL

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

#### 2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. **Content:** For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. **Source Information:** List each system, subsystem, and piece of equipment included in manual identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. **Manufacturers' Maintenance Documentation:** Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:

- D. **Maintenance Procedures:** Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions, and demonstration and training DVD if available, that detail essential maintenance procedures:
- E. **Maintenance and Service Schedules:** Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
- F. **Spare Parts List and Source Information:** Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. **Maintenance Service Contracts:** Include copies of maintenance agreements with name and telephone number of service agent.
- H. **Warranties and Bonds:** Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

**PART 3 - EXECUTION**

**3.1 MANUAL PREPARATION**

- A. **Emergency Procedure Manual:** Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- B. **Product Maintenance Manual:** Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- C. **Operation and Maintenance Manuals:** Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- D. **Manufacturers' Data:** Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- E. **Drawings:** Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
  - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.
- F. **Comply with Division 01 Section "Closeout Procedures"** for schedule for submitting operation and maintenance documentation.

END OF SECTION 01782



**SECTION 01 78 39 - 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/Product Data.
  - 3. Miscellaneous 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 drawings in PDF format, full size, marked-up Record Prints.
- B. Record Specifications / Product Data: Comply with the following:
  - 1. Submit one copy of each approved Product Data submittal.
  - 2. Submit one set in PDF format, full size, approved Product Data.
- D. Miscellaneous Submittals
  - 1. Submit one hard copy of any pertinent documents and one electronic copy in PDF Format

**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:
- 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 / PRODUCT DATA**

- 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 MISCELLANEOUS RECORD SUBMITTALS**

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

**PART 3 - EXECUTION**

**3.1 RECORDING AND MAINTENANCE**

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project. 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 01784

## SECTION 03 0100 - CONCRETE PATCHING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section Includes: concrete patching and repair material.

#### 1.2 ACTION SUBMITTALS

- A. Product Data: For each product.
- B. Samples: For each finish material and color required.
- C. Acceptance Certification.

### PART 2 - PRODUCTS

#### 2.1 MATERIALS

- A. Steel Primer: Ardex Bonding & Anti-Corrosion Agent.
  - 1. Cement, epoxy based coating.
  - 2. Bond Strength: 2100 (24 hours, ASTM C882).
- B. Overhead repair mortar: Single-component, polymer-modified, cement-based repair mortar, containing Portland cement, graded specialty aggregates, dry acrylic polymer and admixtures.
  - 1. Manufacturer: ARDEX B 20 with integral corrosion inhibitor.
  - 2. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° F and 50 percent relative humidity:
  - 3. Working Time: 25 – 45 minutes.
  - 4. Compressive Strength: 5,500 psi at 7 days, 6,500 psi at 28 days, ASTM C109.
  - 5. Flexural Strength: 1,085 psi at 7 days, 1,700 psi at 28 days, ASTM C78.
  - 6. Modulus of Elasticity in Compression: < 2.26 x 106 psi at 28 days, ASTM C469.
  - 7. Splitting Tensile Strength: 485 psi at 7 days, 565 psi at 28 days, ASTM C496, mortar.
  - 8. Shrinkage: less than 0.05%at 7 days, less than 0.10%at 28 days, ASTM C157, air cured.
  - 9. Low -slump, non-sagging. Color: Concrete gray.
  - 10. Non-combustible, both before and after use.
- C. Finish: Lafarge stucco cement, with integral color. Color and texture to match existing precast units.
  - 1. Product shall comply with the following standards: ASTM C 1328, and ASTM C 91.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.
- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas and landscaping from contact due to mixing and handling of materials.
- C. Surface Preparation: Comply with manufacturer's printed instructions and the following. Remove loose and deteriorated materials from surfaces to be patched, to obtain an ICRI concrete surface profile CSP 4 or greater. Use mechanical chipping, sand-blasting or hydrodemolition. Provide right-angle cuts at perimeter of repair by saw-cutting or chipping; do not feather edge. Clean surfaces of bond-inhibiting materials including oil, dust and dirt, laitance and standing water.
- D. Apply primer for exposed steel in accordance with manufacturers written recommendations.
- E. Mixing: Comply with manufacturer's printed instructions and the following. Precondition components to temperature of 70° plus or minus 5° F (21° plus or minus 2.5° C) prior to mixing. Add 6 to 6.5 pints (2.8 to 3.1 L) of clean, potable water per 55-pound bag. Mix using a mechanical mixer to a uniform, lump-free consistency. Avoid over-mixing. Do not add water beyond manufacturer's instructions. Do not add additional powder.
- F. Application: Comply with manufacturer's printed instructions and the following. Apply when ambient and surface temperatures are 45° F and rising. Do not apply in freezing conditions or during precipitation. Comply with manufacturer's guides for hot and cold weather application. Dampen substrate to fill concrete pores with water. Remove ponding, glistening, or surface water (saturated surface dry). Apply scrub coat of repair mortar into substrate to ensure intimate contact and establish bond. Apply mortar while scrub coat is wet. Consolidate and trowel to the desired finish, with minimum thickness of 1/4 inch. For application depths greater than 2 inches, apply in successive lifts, per manufacturer's instructions. Apply first lift and scratch surface to promote mechanical bond to subsequent lifts. Apply second lift as soon as initial lift has hardened sufficiently to receive additional material. A scrub coat is not required between successive lifts. If more than three lifts of material are required, allow at least 24 hours of curing between each third lift and the next application.
- G. Curing: Keep surface damp for 48 hours with continuous light water-fogging. If no coating or sealer is to be applied, a water-based curing compound meeting ASTM standard C309 may be used. Do not use solvent-based curing compounds.
- H. Cleaning: Remove excess material before material cures. If material has cured, remove using mechanical methods which will not damage substrate.
- I. Finish: prepare and finish with a thin coat of colored stucco cement, in accordance with manufacturers written recommendations.

END OF SECTION 03 0100

SECTION 07 2413 - EXTERIOR INSULATION AND FINISH SYSTEM (EIFS)

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. EIFS-clad barrier-wall assemblies that are field applied over substrate.

1.2 PREINSTALLATION MEETINGS

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

1.3 ACTION SUBMITTALS

- A. Product Data: For each EIFS component and accessories.
- B. Samples: 12"x12" sample for each application, each color and texture specified.
- C. Acceptance Certification.

1.4 INFORMATIONAL SUBMITTALS

- A. Manufacturer certificates.
- B. Product certificates.
- C. Product test reports.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An installer certified in writing by EIFS manufacturer as qualified to install manufacturer's system using trained workers.
- B. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, to set quality standards for materials and execution, and to set quality standards for fabrication and installation.

1. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products that comply with these specifications, but are not limited to, the following:
  1. Parex USA, Inc. (basis of design).
  2. Dryvit Systems, Inc.
  3. Master Wall, Inc.
  4. Sto Corp.
- B. Source Limitations: Obtain EIFS products from a single EIFS manufacturer and from sources approved by EIFS manufacturer as tested and compatible with EIFS components.

### 2.2 PERFORMANCE REQUIREMENTS

- A. EIFS Performance: Comply with ICC-ES AC219 and with the following:
  1. Weathertightness: Resistant to water penetration from exterior.
  2. Bond Integrity: Free from bond failure within EIFS components or between EIFS and substrates, resulting from exposure to fire, wind loads, weather, or other in-service conditions.

### 2.3 EIFS MATERIALS

- A. Primer/Sealer: EIFS manufacturer's standard substrate conditioner designed to protect substrates from moisture penetration and to improve the bond between substrate and insulation adhesive.
- B. Molded, (Expanded) Rigid Cellular Polystyrene Board Insulation (EPS): Comply with ASTM C 578, Type I.
  1. Foam Build-Outs: Provide with profiles and dimensions indicated on Drawings.
- C. Reinforcing Mesh: Balanced, alkali-resistant, open-weave, glass-fiber mesh treated for compatibility with other EIFS materials, made from continuous multiend strands with retained mesh tensile strength of not less than 12 oz per sq yard, intermediate impact per ASTM E 2486.
- D. Base-Coat Materials: EIFS manufacturer's standard mixture.
- E. Waterproof Adhesive/Base-Coat Materials: EIFS manufacturer's standard waterproof formulation.

- F. Primer: EIFS manufacturer's standard factory-mixed, elastomeric-polymer primer for preparing base-coat surface for application of finish coat.
- G. Finish-Coat Materials: EIFS manufacturer's standard 100% acrylic-based coating.
  - 1. Color: match existing.
  - 2. Texture: match existing.

**PART 3 - EXECUTION****3.1 EIFS INSTALLATION**

- A. Comply with ASTM C 1397, ASTM E 2511, and EIFS manufacturer's written instructions for installation of EIFS as applicable to each type of substrate.
- B. Primer/Sealer: Apply over substrates and where required by EIFS manufacturer for improving adhesion of insulation to substrate.
- C. Expansion Joints: Install at locations indicated and where required by EIFS manufacturer.
- D. Waterproof Adhesive/Base Coat: To exposed surfaces of insulation, apply in minimum thickness recommended in writing by EIFS manufacturer.
- E. Base Coat: Apply to exposed surfaces of insulation and foam build-outs, in minimum thickness recommended in writing by EIFS manufacturer, but not less than 1/16-inch dry-coat thickness.
- F. Reinforcing Mesh: Embed reinforcing mesh in wet base coat to produce wrinkle-free installation with mesh continuous at corners, overlapped not less than 2-1/2 inches or otherwise treated at joints to comply with ASTM C 1397 and EIFS manufacturer's written instructions. Do not lap reinforcing mesh within 8 inches of corners. Completely embed mesh, applying additional base-coat material if necessary, so reinforcing-mesh color and pattern are invisible.
- G. Foam Build-Outs: Fully embed reinforcing mesh in base coat.
- H. Finish Coat: Apply over dry base coat, maintaining a wet edge at all times for uniform appearance, in thickness required by EIFS manufacturer to produce a uniform finish of color and texture matching approved sample and free of cold joints, shadow lines, and texture variations.

**END OF SECTION 07 2413**

1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  1. Warranty Period: Ten (10) years from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 JOINT SEALANTS, GENERAL

- A. Colors of Exposed Joint Sealants: to be selected by Architect from Manufacturers standards of at least 20 colors.

### 2.2 URETHANE JOINT SEALANTS

- A. Urethane, Type S, Grade NS, Class 50 movement capability, urethane joint sealant; ASTM C 920, Use NT, T, M, A, O, and I.
- B. Acceptable Manufacturers
  1. Tremco, Dymonic 100 (Basis of Design).
  2. Sika Corp. (acceptable)
  3. Pecora Corp. (acceptable)

### 2.3 JOINT-SEALANT BACKING

- A. Cylindrical Sealant Backings: ASTM C 1330, any of the types as approved in writing by joint-sealant manufacturer for joint application.
- B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

### 2.4 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.



## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. **Surface Cleaning of Joints:** Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Remove laitance and form-release agents from concrete.
  - 2. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion.
- B. **Joint Priming:** Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience.
- C. **Masking Tape:** Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces.
- D. **Installation of sealant shall occur prior to installation of water repellents.**

### 3.2 INSTALLATION OF JOINT SEALANTS

- A. **Scope of work:** replace all sealant joints within area of precast materials, at joints between precast units, and at joints between precast and metal copings/flashing.
- B. **General:** Comply with ASTM C 1193 and joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- C. **Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.**
- D. **Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.**
- E. **Install sealants using proven techniques that comply with the following and at the same time backings are installed:**
  - 1. Place sealants so they directly contact and fully wet joint substrates.
  - 2. Completely fill recesses in each joint configuration.
  - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. **Tooling of Nonsag Sealants:** Immediately after sealant application and before skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  - 1. Provide concave joint profile per Figure 8A in ASTM C 1193 unless otherwise indicated.

END OF SECTION 07 9200

## SECTION 09 3500 - WATER REPELLENT

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes surface preparation and the application of water repellent systems on exterior substrates.
  - 1. Cast in place, and precast concrete.

#### 1.2 SUBMITTALS

- A. Product Data: For each type of product. Include test reports, preparation requirements and application instructions.
- B. Quality Control Submittals:
  - 1. Statement of qualifications.
  - 2. Statement of compliance with Regulatory Requirements.
  - 3. Field Quality Control Submittals as specified in Part 3.
  - 4. Manufacturer's field reports.

#### 1.3 QUALITY ASSURANCE

- A. Manufacturer shall have not less than 5 years successful experience in production of products specified.
- B. Installer shall have not less than 3 years of successful experience in installing products specified.
- C. Mockups:
  - 1. Contractor shall prepare 4' of coping (clean etc) in accordance with procedures indicated herein. Then invite the owner and architect to view the mock up. Contractor shall coordinate this site visit with paint prep mockup.
  - 2. Contractor shall apply repellent in accordance with procedures indicated herein. Then invite the owner and architect to view the mock up. Contractor shall coordinate this site visit with paint mockup.
  - 3. Approval of mock up is necessary prior to start of work.
- D. Warranty:
  - 1. Installation shall include a pre-approved "Certified Contractor" and/or a "Certified" Consultant, making all inspections, approving required surface preparation, moisture testing, issuing written reports, and completing the required tests, etc, in order to furnish the Owner a written single source performance warranty that the Water Repellent will

- be free of defects related to workmanship or material deficiency for a ten (10) year period from the date of completion of the work.
2. All defective areas shall be retreated by the system manufacture as determined by the Certified Consultant. The required written warranty shall be provided by the system manufacturer.
  3. The Manufacturer shall be responsible for providing material to treat areas of the substrate where sealer effectiveness does not meet the specified limits.

## PART 2 - PRODUCTS

### 2.1 GENERAL

- A. Products shall comply with State and local regulations concerning AIM (Architectural, Industrial and Maintenance) coatings regarding Volatile Organic Content (VOC).
- B. Water repellent shall be shall be a ready-to-use, single component, non-solvent-borne, surface applied product, penetrating the surface of porous substrates, meeting or exceeding the physical and performance characteristics of the following approved product:
  1. Protectosil® AQUA-TRETE® SG, Evonik Degussa A&S Division (1-800-828-0919).
  2. Color: clear.
  3. Density: 8.3 lbs/gallon.
  4. Volatile Organic Compound (VOC) content: less than 25 grams per liter.
  5. Toxic Fume Emission During Fire – ISO 5659-2: None.
  6. Fire Propagation – UK BS 479 Part 6: Index less than 4.0
  7. Breathable: the finished installation shall allow the substrate to breathe, not trapping moisture.
  8. Resistance to Stains before and after accelerated weathering (ASTM G85 & D4587 2000 hours)
    - Motor Oil – excellent
    - Transmission fluid – excellent
    - Engine coolant – excellent
    - Ketchup – excellent
    - Alcoholic Beverages-excellent
    - Mustard – excellent
    - Wine – excellent
    - Vegetable oil – excellent

**PART 3 - EXECUTION**

3.1 Comply with manufacturer's written recommendations. The following is provided for reference.

3.2 DELIVERY

- A. Packing and Shipping: Deliver products in original unopened packaging with legible manufacturer's identification.
- B. Storage and Protection: Comply with manufacturer's recommendations

3.3 PROJECT CONDITIONS

- A. Environmental Requirements:
  - 1. Maintain ambient temperature above 40 degrees F during and 24 hours after installation.
  - 2. Do not proceed with application on materials if ice or frost is covering the substrate.
  - 3. Do not proceed with application if ambient temperature of surface exceeds 100 degree F.
  - 4. Do not proceed with the application of materials in rainy conditions or if heavy rain is anticipated within 4 hours after application.
- B. Sealer Coordination:
  - 1. Verify compatibility with curing compounds, patching materials, repair mortar, paints, sealants, etc. to be used on masonry surfaces to ensure compatibility with the water and stain repellent.

3.4 EXAMINATION

- A. Verification of Conditions: Examine areas and conditions under which Work is to be performed and identify conditions detrimental to proper or timely completion. Do not proceed until unsatisfactory conditions have been corrected.

3.5 PREPARATION

- A. Protection: Install coverings to protect adjacent surfaces.
- B. Surface Preparation:
  - 1. All caulking, joint sealants, repairing, and patching of concrete surfaces shall be installed and cured before application of repellent.
  - 2. Prior to application of repellent, surfaces shall be cleaned by high pressure water and mild chemical cleaners (as needed) of all dust, dirt, debris, grease, oil, grout, mortar and other foreign matter.
  - 3. Contaminated areas and new surfaces shall be prepared as recommended by the repellent manufacturer and acceptable to the Certified Consultant.

**3.6 FIELD QUALITY CONTROL**

- A. **Spray Test:** After water and stain repellent has dried, spray coated surfaces with water. After surfaces have adequately dried, recoat surfaces that show water absorption.
- B. **Manufacturer's Field Services:** Furnish written certification that surface preparation method and final condition has manufacturer's approval and comply with the warranty. Test area: Furnish results of test area absorption on each type of substrate. Test results shall determine application rate.
- C. **Test Area:** Before application of water and stain repellent will be accepted, a test panel will be applied to the building to verify that no discoloration, darkening or sheen is imparted to the concrete. Core tests required as appropriate for quality assurance according to Certified Consultant.

**3.7 APPLICATION**

- A. Product shall be applied as supplied by the manufacturer without dilution or alteration.
- B. Apply with in accordance with manufacturer's recommendations using either spray, brush, or roller.
- C. Treat horizontal surfaces in a flooding application until the material ponds on the surface. After 10 or 15 minutes sweep, squeegee, or mop any remaining puddles to dry areas.
- D. Apply at temperature and weather conditions recommended by the manufacturer or written in this specification.
- E. Follow manufacturer's recommendations concerning protection of glass, metal and other non-porous substrates. Contractor will be responsible to clean all surfaces that are contaminated by the water repellent.
- F. Follow manufacturer's recommendation concerning protection of plants, grass and other vegetation. Contractor will be responsible for replacing all plants, grass or vegetation damaged by the water repellent.

**3.8 CLEANING**

- A. **As Work Progresses:** Clean spillage and overspray from adjacent surfaces using materials and methods as recommended by water and stain repellent manufacturer. Remove protective coverings from adjacent surfaces when no longer needed.

**3.9 COMPLETION**

- A. Work that does not conform to specified requirements shall be corrected and/or replaced as directed by the Owners Representative at contractor's expense without extension of time

END OF SECTION 09 3500

## SECTION 09 9113 - EXTERIOR PAINTING

### PART 1 - GENERAL

#### 1.1 SUMMARY

- A. Section includes surface preparation and the application of paint systems on exterior substrates.
  - 1. Steel and iron.
  - 2. Galvanized metal.

#### 1.2 DEFINITIONS

- A. MPI Gloss Level 1: Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- D. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- E. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- F. MPI Gloss Level 7: More than 85 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.

#### 1.4 QUALITY ASSURANCE

- A. Prep Mockup: after the existing steel lintels, (intended for paint mockup as noted below) have been prepared (all exposed surfaces removed of paint, rust, etc, down to bright metal) then the contractor shall invite the owner and architect to inspect the lintels prior to paint mockup.
- B. To reduce the number of site visits by the owner and architect, the contractor shall coordinate these mockups (prep and paint) with site visits for owner and architect to view mockups for water repellent (prep and application).
- C. Paint Mockup: create mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Contractor shall invite the owner and architect to inspect the mockups prior to start of work.
2. Sheen level: Gloss.
3. Final approval of color selections will be based on mockups.
  - a. See drawings for scope of colors.
  - b. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

## 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. Acceptable Manufacturers:
  1. Sherwin Williams Company.
  2. Glidden, a division of PPG Company.
  3. Valspar Corp.

## 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. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- C. Proceed with coating application only after unsatisfactory conditions have been corrected.
  1. Application of coating indicates acceptance of surfaces and conditions.



### 3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove all paint, rust, etc (down to bright metal) on all exposed surfaces of steel lintels indicated on drawings for painting.
- C. 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.

### 3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions and recommendations in "MPI 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 CLEANING AND PROTECTION

- A. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- B. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

### 3.5 EXTERIOR PAINTING SCHEDULE

- A. Steel Substrates:
  - 1. Water-Based Light Industrial Coating System MPI EXT 5.1:
    - a. Prime Coat: universal primer, rust inhibitive, water based, MPI #: 69, 79 or 95 (basis of design: Sherwin Williams Kem Kromik).
    - b. Intermediate and Top Coats: Light industrial coating, exterior, water based, (basis of design: Sherwin Williams Industrial Enamel HS).

END OF SECTION 09 9113