

## **Specification**

**USDB Storefront Window Replacement**  
Utah Schools for the Deaf and the Blind  
742 S Harrison Blvd  
Ogden, UT 84404

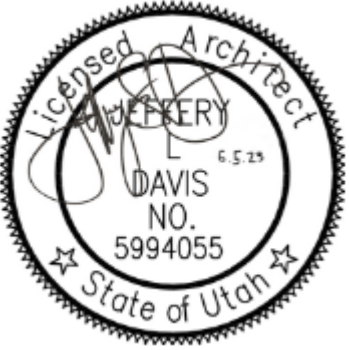
---

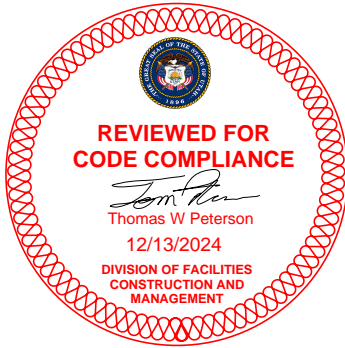
November 1, 2024

Permit Set



**SECTION 00 01 07**  
**SEALS & SIGNATURES**

	<p>I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly Licensed Architect under the laws of the State of Utah.</p> <p>Jeffery L. Davis</p> <hr/> <p>Signature _____ Date _____</p> <p>Registration Expires: 5/31/2025 UT Reg No. 5994055-0301</p> <p>Pages or sheets covered by this seal: G and A Series</p> <p>Divisions: 01-14, except those listed elsewhere.</p>
---	--



**END OF SECTION**



**SECTION 00 01 10  
TABLE OF CONTENTS**

**DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS**

00 00 00	COVER	MSR
00 01 07	SEALS	MSR
00 01 10	TABLE OF CONTENTS	MSR
00 50 00	CONTRACTING FORMS AND SUPPLEMENTS	MSR

**DIVISION 01 - GENERAL REQUIREMENTS**

01 10 00	SUMMARY	MSR
01 20 00	PRICE AND PAYMENT PROCEDURES	MSR
01 23 00	ALTERNATES	MSR
01 30 00	ADMINISTRATIVE REQUIREMENTS	MSR
01 40 00	QUALITY REQUIREMENTS	MSR
01 50 00	TEMPORARY FACILITIES AND CONTROLS	MSR
01 60 00	PRODUCT REQUIREMENTS	MSR
01 60 10	SUBSTITUTION PROCEDURES	MSR
01 60 10.01	SUBSTITUTION REQUEST FORM	MSR
01 61 16	VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS	MSR
01 70 00	EXECUTION AND CLOSEOUT REQUIREMENTS	MSR
01 74 19	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL	MSR
01 78 00	CLOSEOUT SUBMITTALS	MSR

**DIVISION 02 - EXISTING CONDITIONS**

02 41 00	DEMOLITION	MSR
----------	------------	-----

**DIVISION 03 - CONCRETE (NOT USED)**

**DIVISION 04 - MASONRY (NOT USED)**

**DIVISION 05 - METALS (NOT USED)**

**DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES**

06 10 53	MISCELLANEOUS ROUGH CARPENTRY	MSR
06 20 00	FINISH CARPENTRY	MSR

**DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

07 21 00	THERMAL INSULATION	MSR
07 27 13	FLEXIBLE FLASHINGS	MSR
07 92 00	JOINT SEALANTS	MSR

**DIVISION 08 - OPENINGS**

08 43 13	ALUMINUM-FRAMED STOREFRONT	MSR
08 71 00	DOOR HARDWARE (ALTERNATE)	AHC
08 80 00	GLAZING	MSR

**DIVISION 09 - FINISHES**

09 21 16	GYPSUM BOARD ASSEMBLIES (ALLOWANCE)	MSR
09 91 23	INTERIOR PAINTING (ALLOWANCE)	MSR

**DIVISION 10 - SPECIALTIES (NOT USED)**

**DIVISION 11 - EQUIPMENT (NOT USED)**

**DIVISION 12 - FURNISHINGS**

12 36 13 SOLID SURFACE WINDOW SILLS

MSR

**DIVISION 13 - SPECIAL CONSTRUCTION (NOT USED)**

**DIVISION 14 - CONVEYING EQUIPMENT CONSTRUCTION (NOT USED)**

**DIVISIONS 21 – 28 (NOT USED)**

**DIVISIONS 31 – 33 (NOT USED)**

**END OF SECTION**

**SECTION 00 50 00**

**CONTRACTING FORMS AND SUPPLEMENTS**

**PART 1 GENERAL**

**1.01 AGREEMENT AND CONDITIONS OF THE CONTRACT**

- A. See DFCM website for Form of Agreement and General Conditions to be used.
  - 1. <https://dfcm.utah.gov/construction-management/standard-documents/>

**1.02 FORMS**

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in Contract Documents.
- B. Bond Forms: See DFCM website
- C. Post-Award Certificates and Other Forms: See DFCM website
- D. Clarification and Modification Forms: See DFCM website
- E. Closeout Forms: See DFCM website

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**





## SECTION 01 10 00

### SUMMARY

#### PART 1 GENERAL

##### 1.01 PROJECT

- A. Project Name: USDB Storefront Window Replacement.
- B. Owner's Name: Utah Schools for the Deaf and the Blind.
- C. Architect's Name: MSR Design.
- D. Additional Project contact information can be found on the Drawings.
- E. The Project consists of the replacement of storefront windows and doors in an existing building.

##### 1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 50 00 - Contracting Forms and Supplements.

##### 1.03 DESCRIPTION OF WORK

- A. Scope of minor demolition and removal work is shown on drawings and specified in Section 02 41 00.
- B. Scope of alterations and new construction work is shown on drawings.
- C. Contractor is required to remove and store the following prior to start of work, for later reinstallation by Contractor:
  - 1. Door hardware, for reuse.
  - 2. Chair rail, for reinstallation.
  - 3. Additional items is indicated in the Drawings.

##### 1.04 WORK BY OWNER

- A. Owner will supply and install the following:
  - 1. Security systems.

##### 1.05 OWNER-FURNISHED ITEMS

- A. The Work includes providing support systems to receive Owner's equipment, and mechanical and electrical connections.
- B. The Owner will arrange and pay for delivery of Owner-furnished items in accordance with the Contractor's Construction Schedule, and will inspect deliveries for damage.
- C. If Owner-furnished items are damaged, defective or missing, the Owner will arrange for replacement. The Owner will also arrange for manufacturer's field services, and the delivery of manufacturer's warranties and bonds to the Contractor.
- D. The Contractor is responsible for designating the delivery dates of Owner furnished items in the Contractor's Construction Schedule and for receiving, unloading and handling Owner-furnished items at the site.
- E. The Contractor is responsible for protecting Owner-furnished items from damage, including damage from exposure to the elements, and to repair or replace items damaged as a result of his operations.

##### 1.06 OWNER OCCUPANCY

- A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.
- B. Owner intends to occupy the Project upon Substantial Completion.
- C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- D. Schedule the Work to accommodate Owner occupancy.

### **1.07 CONTRACTOR USE OF SITE AND PREMISES**

- A. Construction Operations: Limited to areas noted on Drawings.
  - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
- B. Arrange use of site and premises to allow:
  - 1. Owner occupancy.
  - 2. Work by Others.
  - 3. Work by Owner.
  - 4. Use of site and premises by the public.
- C. Provide access to and from site as required by law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.
  - 3. Alternative entrances, exits and Interim life safety procedures will be required if the main entrance or any fire exits are closed during construction. Coordinate durations with Owner.
- D. Existing building spaces may not be used for storage.
- E. Time Restrictions:
  - 1. Limit conduct of especially noisy, malodorous, and dusty exterior work to after business hours or no limit with approval by building owner.
- F. Utility Outages and Shutdown:
  - 1. Limit disruption of utility services to hours the building is unoccupied.
  - 2. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 48 hours notice to Owner and authorities having jurisdiction.
  - 3. Prevent accidental disruption of utility services to facilities.

### **1.08 WORK SEQUENCE**

- A. Coordinate construction schedule and operations with Owner.
- B. Coordinate work of the various Sections of Specifications to assure efficient and orderly sequence of installation of construction elements, with provisions for accommodating items installed later.
- C. Verify characteristics of elements of interrelated operating equipment are compatible; coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduits, as closely as practicable; make runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. Execute cutting and patching to integrate elements of Work, uncover ill-timed, defective, and non-conforming Work, provide openings for penetrations of existing surfaces, and provide samples for testing if required. Seal penetrations through floors, walls, and roof.

### **1.09 DEFINITIONS AND EXPLANATIONS**

- A. Imperative language is used generally in the specifications. Except as otherwise indicated, requirements expressed imperatively are to be performed by the Contractor as if preceded by the phrase "The Contractor shall".
- B. The term "provide" means furnish and install, complete, and ready for intended use. Except as otherwise defined in greater detail, the term "furnish" means supply and deliver to the project site, including unloading, unpacking, inspecting, and storing until ready for receipt by Owner, installation, etc., as applicable.

- C. Except as otherwise defined in greater detail, the term “install” is used to describe operations at project site including assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations, as applicable.
- D. The term “indicated” is as cross-reference to graphics, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in contract documents. Where terms such as “shows”, “noted”, “schedules”, and “specified” are used in lieu of “indicated”, it is for purpose of helping reader locate cross-reference, and no limitations of location is intended.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**



**SECTION 01 20 00**  
**PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Procedures for preparation and submittal of application for final payment.

**1.02 RELATED REQUIREMENTS**

- A. Section 00 50 00 - Contracting Forms and Supplements: Forms to be used.
- B. Section 01 78 00 - Closeout Submittals: Project record documents.

**1.03 SCHEDULE OF VALUES**

- A. Use Schedule of Values Form: As provided on Owner's website.
- B. Submit Schedule of Values in timeframe indicated on Owner's website
- C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization and bonds and insurance.
- D. Include within each line item, a direct proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders, with each Application For Payment.

**1.04 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Use Form As provided on Owner's website.
- C. For each item, provide a column for listing each of the following:
  - 1. Item Number.
  - 2. Description of work.
  - 3. Scheduled Values.
  - 4. Previous Applications.
  - 5. Work in Place and Stored Materials under this Application.
  - 6. Authorized Change Orders.
  - 7. Total Completed and Stored to Date of Application.
  - 8. Percentage of Completion.
  - 9. Balance to Finish.
  - 10. Retainage.
- D. Execute certification by signature of authorized officer.
- E. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- F. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- G. Submit one electronic and no hard-copies \*unless otherwise instructed) of each Application for Payment.
- H. Include the following with the application:
  - 1. Transmittal letter as specified for submittals in Section 01 30 00.
  - 2. Construction progress schedule, revised and current as specified in Section 01 30 00.
  - 3. Partial release of liens from major subcontractors and vendors.

4. Project record documents as specified in Section 01 78 00, for review by Owner which will be returned to the Contractor.
  5. Affidavits attesting to off-site stored products.
- I. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

#### **1.05 MODIFICATION PROCEDURES**

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to Contract Documents.
- B. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- C. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  2. Promptly execute the change.
- D. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required . Contractor shall prepare and submit a estimated price quotation within 14 days.
- E. Contractor may propose a change by submitting a request for change to Architect, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation. Document any requested substitutions in accordance with Section 01 60 00.
- F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
  1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
  2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect.
  3. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.
  4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.
- G. Substantiation of Costs: Provide full information required for evaluation.
  1. Provide the following data:
    - a. Quantities of products, labor, and equipment.
    - b. Taxes, insurance, and bonds.
    - c. Overhead and profit.
    - d. Justification for any change in Contract Time.
    - e. Credit for deletions from Contract, similarly documented.
  2. Support each claim for additional costs with additional information:
    - a. Origin and date of claim.
    - b. Dates and times work was performed, and by whom.
    - c. Time records and wage rates paid.
    - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
  3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

- H. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- J. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- K. Promptly enter changes in Project Record Documents.

**1.06 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. All closeout procedures specified in Section 01 70 00.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**





## SECTION 01 23 00

### ALTERNATES

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Description of Alternates.
- B. Procedures for pricing Alternates.
- C. Documentation of changes to Contract Sum and Contract Time.

##### 1.02 RELATED REQUIREMENTS

- A. Document 00 21 13 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.

##### 1.03 ACCEPTANCE OF ALTERNATES

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

##### 1.04 SCHEDULE OF ALTERNATES

- A. Alternate No. 01 - Additional Storefront Replacement:
  - 1. Base Bid: Unhatched area, as shown on Drawings.
  - 2. Alternate: Hatched areas, as shown on Drawings.
    - a. Remove and replace existing storefront windows within area of work identified with hatch on A101.
    - b. Patch and repair adjacent interior finishes as required for installation of new glazing system.
    - c. Prep new doors for reinstallation of existing hardware and associated security and access systems. New pulls may be required to meet code.
- B. Alternate No. 02 - Interior Storefront Door Replacement:
  - 1. Base Bid: No work to interior vestibule doors.
  - 2. Alternate:
    - a. Replace existing interior vestibule doors to meet ADA, see floor plan for locations.
    - b. Prep new doors for reinstallation of existing hardware and associated security and access systems. New pulls may be required to meet code.

#### PART 2 PRODUCTS - NOT USED

#### PART 3 EXECUTION - NOT USED

END OF SECTION



**SECTION 01 30 00**  
**ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General administrative requirements.
- B. Electronic document submittal service.
- C. Release of CAD/BIM files.
- D. Preconstruction meeting.
- E. Progress meetings.
- F. Construction progress schedule.
- G. Coordination drawings.
- H. Submittals for review, information, and project closeout.
- I. Number of copies of submittals.
- J. Requests for Information (RFI) procedures.
- K. Submittal procedures.

**1.02 RELATED REQUIREMENTS**

- A. DFCM Contractors Agreement and General Conditions: Dates for applications for payment.
- B. Section 01 60 00 - Product Requirements: General product requirements.
- C. Section 01 70 00 - Execution and Closeout Requirements: Additional coordination requirements.
- D. Section 01 78 00 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

**1.03 GENERAL ADMINISTRATIVE REQUIREMENTS**

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

**1.04 PROJECT COORDINATOR**

- A. Project Coordinator: General Contractor.
- B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for site and building access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Project Coordinator.
- D. Comply with Project Coordinator's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities. Responsibility for providing temporary utilities and construction facilities is identified in Section 01 10 00 - Summary.
- F. Coordinate field engineering and layout work under instructions of the Project Coordinator.
- G. Make the following types of submittals to Architect through the Project Coordinator:
  - 1. Requests for Information.
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.

6. Manufacturer's instructions and field reports.
7. Applications for payment and change order requests.
8. Progress schedules.
9. Coordination drawings.
10. Correction Punch List and Final Correction Punch List for Substantial Completion.
11. Closeout submittals.

## **PART 2 PRODUCTS - NOT USED**

## **PART 3 EXECUTION**

### **3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE**

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF, MS Word, or MS Excel) format, as appropriate to the document, and transmitted via Internet-based submittal service.
  1. The web-based software will provide status logs, reports, searching and automated notifications.
  2. Besides submittals for review, information, and closeout, this procedure applies to Requests for Information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
  3. Contractor and Architect are required to use this service. Owner is to be allowed full access.
  4. It is Contractor's responsibility to submit documents in allowable format.
  5. Subcontractors, suppliers, and Architect's consultants are to be permitted to use the service at no extra charge.
  6. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, [www.adobe.com](http://www.adobe.com), or Bluebeam PDF Revu, [www.bluebeam.com](http://www.bluebeam.com)), unless such software capability is provided by the service provider.
  7. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
  8. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts, which shall be delivered by mail or courier.
- B. Cost: The cost of the service will be paid by the Construction Manager.
- C. Submittal Service (if used): Use one of the following:
  1. Submittal Exchange (tel: 1-800-714-0024): [www.submittalexchange.com/#sle](http://www.submittalexchange.com/#sle).
  2. EADOC LLC (tel: 1-877-305-3844): [www.eadocsoftware.com/#sle](http://www.eadocsoftware.com/#sle).
  3. Newforma Project Cloud: [www.newformaprojectcloud.com](http://www.newformaprojectcloud.com); 800-303-4650; [projectcloud@newforma.com](mailto:projectcloud@newforma.com)
  4. Procore
  5. Prolog; <https://prolog.estescompany.com/PrologConverge/WebClient/>
  6. Other, as approved by the Owner and Architect.
- D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

### **3.02 RELEASE OF CAD/BIM FILES**

- A. Contractors may request plans for their use/benefit for assistance in preparing submittals or for use in construction.
  1. The Revit model will be provided at no charge.
  2. If CAD files, contractor shall identify specific sheets to be produced as files.
  3. A signed release form is required.

### 3.03 PRECONSTRUCTION MEETING

- A. Project Coordinator will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
  - 4. Major subcontractors.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties to Contract, the Owner's Representative and Architect.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.
- D. Project Coordinator will record minutes and distribute copies within 7 days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.
  - 1. Minutes will be distributed through email or Web-based project management software system.

### 3.04 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at maximum monthly intervals.
- B. Attendance Required:
  - 1. Contractor.
  - 2. Owner.
  - 3. Architect, at frequency per Owner-Architect agreement.
  - 4. Special consultants.
  - 5. Contractor's superintendent.
  - 6. Major subcontractors.
  - 7. Major Suppliers.
  - 8. Additional consultants, subcontractors, suppliers and product representatives as appropriate to agenda topics for each meeting.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems that impede, or will impede, planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Review of RFIs log and status of responses.
  - 7. Review of off-site fabrication and delivery schedules.
  - 8. Maintenance of progress schedule.
  - 9. Corrective measures to regain projected schedules.
  - 10. Planned progress during succeeding work period.
  - 11. Coordination of projected progress.
  - 12. Maintenance of quality and work standards.
  - 13. Effect of proposed changes on progress schedule and coordination.
  - 14. Other business relating to work.

- D. Project Coordinator will record minutes and distribute copies within 5 days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.
  - 1. Minutes will be distributed through email or Web based project management software system

### **3.05 CONSTRUCTION PROGRESS SCHEDULE**

- A. Provide construction progress schedule as defined in DFCM Contractors Agreement and General Conditions:
- B. Submit updated schedule with each Application for Payment.

### **3.06 COORDINATION DRAWINGS**

- A. Provide information required by Project Coordinator for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect.

### **3.07 REQUESTS FOR INFORMATION (RFI)**

- A. Definition: A request seeking one of the following:
  - 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
  - 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
  - 1. Prepare a separate RFI for each specific item.
    - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
    - b. Do not forward requests which solely require internal coordination between subcontractors.
  - 2. Prepare using software provided by the Electronic Document Submittal Service (if used).
  - 3. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
  - 1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
  - 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
    - a. Approval of submittals (use procedures specified elsewhere in this section).
    - b. Approval of substitutions (see Section - 01 60 00 - Product Requirements)
    - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
    - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
  - 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
  - 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.

- a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
  - 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
  - 2. Owner's, Architect's, and Contractor's names.
  - 3. Discrete and consecutive RFI number, and descriptive subject/title.
  - 4. Issue date, and requested reply date.
  - 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
  - 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
  - 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
  - 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
  - 2. Note dates of when each request is made, and when a response is received.
  - 3. Highlight items requiring priority or expedited response.
  - 4. Highlight items for which a timely response has not been received to date.
  - 5. Identify and include improper or frivolous RFIs.
- H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
  - 1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
  - 1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
  - 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
  - 3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
  - 4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

### **3.08 SUBMITTAL SCHEDULE**

- A. Submit to Architect for review a schedule for submittals in tabular format.
  - 1. Coordinate with Contractor's construction schedule and schedule of values.
  - 2. Format schedule to allow tracking of status of submittals throughout duration of construction.

3. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
  - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.

### **3.09 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  1. Product data.
  2. Shop drawings.
  3. Samples for selection.
  4. Samples for verification.
  5. Other types indicated.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 - Closeout Submittals.

### **3.10 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  1. Design data.
  2. Certificates.
  3. Test reports.
  4. Inspection reports.
  5. Manufacturer's instructions.
  6. Manufacturer's field reports.
  7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.
- C. Daily Log: Submit to Owner through Architect two (2) copies of Contractor's daily log indicating all personal on-site including names and time on site. Submit at maximum of monthly intervals at progress meetings and immediately upon request of Owner

### **3.11 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 78 00 - Closeout Submittals:
  1. Project record documents.
  2. Operation and maintenance data.
  3. Warranties.
  4. Bonds.
  5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

### **3.12 NUMBER OF COPIES OF SUBMITTALS**

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
  1. Transmit to Architect/ Engineer via email to General Contractor or via Electronic Document Submittal Service.



- B. Extra Copies at Project Closeout: See Section 01 78 00.
- C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
  - 1. Retained samples will not be returned to Contractor unless specifically so stated.

### 3.13 SUBMITTAL PROCEDURES

- A. General Requirements:
  - 1. Use a single transmittal for related items.
  - 2. Submit separate packages of submittals for review and submittals for information, when included in the same specification section.
  - 3. Transmit using approved form.
    - a. Use Contractor's form, subject to prior approval by Architect.
      - 1) Or use form generated by Electronic Document Submittal Service software.
  - 4. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
  - 5. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
  - 6. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
    - a. Submittals from sources other than the Contractor, or without Contractor's stamp will not be acknowledged, reviewed, or returned.
  - 7. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
    - a. Send submittals in electronic format via email to Architect.
      - 1) Or upload submittals in electronic form to Electronic Document Submittal Service website (if used)
  - 8. Schedule submittals to expedite the Project, and coordinate submission of related items.
    - a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
    - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
    - c. For sequential reviews involving approval from authorities having jurisdiction (AHJ), in addition to Architect's approval, allow an additional 30 days.
  - 9. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
  - 10. Provide space for Contractor and Architect review stamps.
  - 11. When revised for resubmission, identify all changes made since previous submission.
  - 12. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
  - 13. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
  - 14. Submittals not requested will be recognized, and will be returned "Not Reviewed",
- B. Product Data Procedures:
  - 1. Submit only information required by individual specification sections.
  - 2. Collect required information into a single submittal.
  - 3. Submit concurrently with related shop drawing submittal.
  - 4. Do not submit (Material) Safety Data Sheets for materials or products.
- C. Shop Drawing Procedures:

1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
  2. Do not reproduce Contract Documents to create shop drawings.
  3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- D. Samples Procedures:
1. Transmit related items together as single package.
  2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
  3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.
- E. Submittals shall be numbered by Specification section and sequence: ie 23 5243 - 1, 23 5243-2. Revise submittals with original number and a sequential alphabetic suffix.

### **3.14 SUBMITTAL REVIEW**

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.
- B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.
- D. Architect's and consultants' actions on items submitted for review:
1. Authorizing purchasing, fabrication, delivery, and installation:
    - a. "Approved", or language with same legal meaning.
    - b. "Approved as Noted, Make Corrections Noted", or language with same legal meaning.
      - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
    - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
  2. Not Authorizing fabrication, delivery, and installation:
    - a. "Revise and Resubmit".
      - 1) Resubmit revised item, with review notations acknowledged and incorporated.
      - 2) Non-responsive resubmittals may be rejected.
    - b. "Rejected".
      - 1) Submit item complying with requirements of Contract Documents.
- E. Architect's and consultants' actions on items submitted for information:
1. Items for which no action was taken:
    - a. "Received" - to notify the Contractor that the submittal has been received for record only.
  2. Items for which action was taken:
    - a. "Reviewed" - no further action is required from Contractor.

**END OF SECTION**

**SECTION 01 40 00**  
**QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Submittals.
- B. References and standards.
- C. Testing and inspection agencies and services.
- D. Contractor's construction-related professional design services.
- E. Contractor's design-related professional design services.
- F. Control of installation.
- G. Mock-ups.
- H. Tolerances.
- I. Defect Assessment.

**1.02 RELATED REQUIREMENTS**

- A. DFCM Contractors Agreement and General Conditions: Inspections and approvals required by public authorities.
- B. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- C. Section 01 60 00 - Product Requirements: Requirements for material and product quality.

**1.03 DEFINITIONS**

- A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
  - 1. Design Services Types Required:
    - a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.
    - b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
  - B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, appropriately licensed design professional.

**1.04 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES**

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
  - 1. Temporary sheeting, shoring, or supports.
  - 2. Temporary scaffolding.
  - 3. Temporary bracing.
  - 4. Temporary hoist(s) and rigging.
  - 5. Investigation of soil conditions and design of temporary foundations to support construction equipment.

### **1.05 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES**

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Base design on performance and/or design criteria indicated in individual specification sections.
  - 1. Submit a Request for Information to Architect if the criteria indicated are not sufficient to perform required design services.
- C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
  - 1. Structural Design: Include physical characteristics, engineering calculations, and resulting dimensional limitations as described in Section 08 43 13 - Aluminum-Framed Storefronts.

### **1.06 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Designer's Qualification Statement: Submit for Architect's knowledge as contract administrator, or for Owner's information.
  - 1. Include information for each individual professional responsible for producing, or supervising production of, design-related professional services provided by Contractor.
    - a. Full name.
    - b. Professional licensure information.
    - c. Statement addressing extent and depth of experience specifically relevant to design of items assigned to Contractor.
- C. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
  - 1. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
  - 2. Include required product data and shop drawings.
  - 3. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
  - 4. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.

### **1.07 REFERENCES AND STANDARDS**

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

## **PART 2 PRODUCTS - NOT USED**

## **PART 3 EXECUTION**

### **3.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### **3.02 MOCK-UPS**

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.
- B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.
- C. Notify Architect and Architect's Consultant fifteen (15) working days in advance of dates and times when mock-ups will be constructed.
- D. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
- E. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- F. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- G. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
- H. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
- I. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.
- J. Where possible salvage and recycle the demolished mock-up materials.

### **3.03 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### **3.04 DEFECT ASSESSMENT**

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

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

**END OF SECTION**

**SECTION 01 50 00**  
**TEMPORARY FACILITIES AND CONTROLS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Temporary utilities: Electricity, lighting, heat, ventilation.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Security requirements.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Project signage.
- I. Field offices.

**1.02 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

**1.03 DEFINITIONS**

- A. Project Coordinator: General Contractor.

**1.04 DEWATERING**

- A. Provide temporary means and methods for dewatering all temporary facilities and controls.
- B. Maintain temporary facilities in operable condition.

**1.05 GENERAL**

- A. Install temporary facilities and utilities in conformance with State and Local Codes and requirements.
- B. Contractors to obtain and pay for required applications, permits and inspections.
- C. Early Service: Any Contractor requiring temporary service before it can be provided as specified, or whose requirements with respect to a particular service differ from the service specified shall provide such service as suits his needs, at his own expense, and in a manner satisfactory to the Construction Manager.
- D. Maintenance: Temporary facilities and utilities are to be maintained and kept in good operating condition. Maintenance men necessary to perform this work shall be provided in accordance with requirements. Maintenance time will include normal working hours for all trades and start up and shut down overtime as required.
- E. Removals: Subject to approval of Construction Manager, contractor providing temporary facilities or services shall remove same when no longer required or when their function is replaced by authorized use of permanent facilities. Other removal time may be directed by Construction Manager.
- F. Install temporary work in such a manner as not to interfere with the permanent construction.
- G. Disclaimer: Specific administrative and procedural minimum actions are specified in this section, as extension of provisions in General Conditions and other contract documents. These requirements have been included for special purposes as indicated. Nothing in this section is intended to limit types and amounts of temporary work required, and no omission from this section will be recognized as an indication by Architect, Engineer or Construction Manager that such temporary activity is not required for successful completion of the work and compliance with requirements of contract documents.

Provisions of this section are applicable to, but not by way of limitation, utility services, construction facilities, security/protection provisions, and support facilities.

- H. Use of permanent systems and facilities:
  - 1. Obtain written agreement with Owner, establishing start of warranties and conditions of use:
    - a. Systems complete, with utility connections and safety devices.
    - b. Automatic controls operational.
    - c. Temporary filters and items required for protection of equipment and finishes are in place.
    - d. Replace items damaged during temporary service use.

#### **1.06 TEMPORARY UTILITIES**

- A. Owner will provide the following:
  - 1. Electrical power , consisting of connection to existing facilities.
  - 2. Water supply, consisting of connection to existing facilities.
- B. Provide and pay for all lighting, heating and cooling, and ventilation required for construction purposes.
  - 1. General Responsibilities: Temporary heating responsibilities and equipment types relate to the extent of building enclosure and work performed as follows:
    - a. Partial Enclosure: Temporary heat for partially enclosed portions of the building prior to the building being permanently enclosed is each Contractor's responsibility. Partial enclosure is defined as permanent walls of the space in place, all openings provided with suitable temporary enclosures or permanent enclosures, not less than one floor slab or roof directly above the space in place.
      - 1) Equipment: Heating equipment shall be approved gas-fired forced air heaters. Operation of electric resistance heaters or air-conditioning units is optional but all associated fuel costs for increased temporary electric power, if available, and separate metering to be borne by the using Contractor.
      - 2) Cost: All costs borne by Contractor providing temporary heat.
      - 3) Work Restrictions: No interior type finish work beyond hanging wallboard. Protect all such work from becoming wet.
    - b. Permanent Enclosure: Temporary heat of the building after the building is permanently enclosed and approved as such by the Architect, shall be provided by the Contractor. Permanent enclosure is defined as permanent walls, roofs, copings, and flashings in place and weathertight, windows in place and glazed and all entrance enclosures either permanently in place or provided with suitable temporary enclosures.
      - 1) Equipment: Temporary construction heaters, indirect fire heaters.
      - 2) Cost: Cost of fuel consumed paid for by the Contractor.
      - 3) Work Restrictions: None except as may be stated in separate Specification Sections or required by the manufacturer, such as special ventilation requirements.
  - 2. Ventilation: The Mechanical Contractor shall provide ventilation for the building and to prevent building up of harmful dusts and fumes and to remove excess moisture. During warm weather, provide an adequate supply of fresh air (minimum 1 to 1-1/2 air changes per hour) when necessary to properly ventilate for moisture, dust, fumes from paints, cements, or adhesives in tightly enclosed area where natural ventilation will not be sufficient. Ventilation requirements may be supplemented by the building's permanent HVAC system but primary responsibility rests with the designated trade contractor.
  - 3. Mechanical Trade Contractor Responsibilities:
    - a. Maintain as to temperatures and ventilation required for work in various parts of the building as follows:
      - 1) Stored Materials: As recommended by manufacturer.
      - 2) Installed Materials: As recommended by manufacturer for the length of time following installation.



- b. Maintain that portion of any floor thereof which has been constructed, or partly constructed, at a temperature and humidity that will ensure against damage due to warping, buckling, excessive shrinkage, etc., and adequate ventilation until the permanent HVAC system is operating. Trade Contractor will be responsible for damage to work under other contracts due to smoke or other damage caused by improper temporary heating.
  - c. Installation, connection, operation, and maintenance of temporary heating and ventilating devices to be performed by tradesmen proficient in the skills required and meet requirements of applicable regulator agencies.
  - d. Temperature Requirements:
    - 1) Provide temperatures required in various parts of the buildings as specified herein below:
    - 2) All Trades: provide the range of temperatures required for temporary heat, so the temperature as recommended by the manufacturer of the material concerned is maintained while such materials as mentioned above are stored in the building or being installed, and for the length of time recommended following installation. In those portions of the building where work is in progress or completed, it must be protected from freezing if subject to damage there from.
4. During General Contract Work: Provide the following:
- a. During installation of gypsum wallboard or gypsum lath, a temperature of not less than 55 deg F during working hours, and a temperature of at least 40 deg F at all other times throughout the heating season.
  - b. Wall before plaster work or joint work for gypsum wall board begins and continuous throughout setting and drying periods, a temperature range between 50 and 75 deg F shall be maintained day and night. During this period, no finish woodwork, resilient flooring or flexible wall coverings shall be installed or stored in the buildings, and no finish painting or applying of finish wall coatings shall be undertaken.
  - c. For a period of 10 days previous to the placing of interior wood finish and throughout the placing of this and other interior finishing, varnishing, painting, etc., and until final acceptance of the work or until fully occupied by the Owner, provide sufficient heat to produce a temperature of not less than 60 deg F.
5. Permanent Systems:
- a. Ten days prior to setting millwork and/or wood doors and when approved by Architect, use and maintain the permanent HVAC system for heating, cooling and ventilation. The amount of time the permanent system will be used during the construction project should be at most four months. Maintenance shall include the following:
    - 1) Proper operation and maintenance of the HVAC plant until acceptance of building by Owner.
    - 2) Maintenance of temporary filters in all equipment to prevent accumulation of dust and dirt in coils, housing, and ductwork.
    - 3) Prior to Final Inspection: Replacement of all (temporary and existing) filters with new filters, thorough cleaning of coils and other equipment, putting entire system into first class condition, cleaning traps and devices, adjustment and renewal of all materials and equipment not functioning correctly.
    - 4) Use of permanent heating or cooling equipment for temporary heating or cooling shall not affect guarantee. Guarantee shall take effect at time of building acceptance by Owner. Mechanical contractor to provide extended warranty as needed.
    - 5) Cost of all fuel for operation of permanent heating system shall be paid by the Contractor.
  - b. Close off return air to the permanent systems and provide only single-pass air during the course of construction. This practice shall remain in place until area is clean and system is ready for final balancing.

- c. Replace filters in all equipment to prevent accumulation of dust and dirt in coils, housings, and ductwork.
  - d. Prior to Final Inspection:
    - 1) Replace temporary filters with new filters.
    - 2) Thoroughly clean coils and other equipment.
    - 3) Clean traps and devices, adjust and renew any and all materials and equipment not functioning correctly.
    - 4) Vacuum clean the duct system.
    - 5) Restore equipment to like new condition.
- C. Temporary light and power:
- 1. Each Contractor:
    - a. Provide temporary light and power for its own construction field office.
    - b. Provide and pay for its own extensions for lights or power tools beyond the receptacle outlets provided below.
  - 2. Electrical Contractor:
    - a. Provide temporary light and power distribution for construction purposes for all trades including the cost of running temporary service from the utility supply. The temporary lighting and power system shall comply with all applicable OSHA regulations.
      - 1) Temporary power to be sufficient to operate all "light tools" and equipment (electric arc welders excluded) and permanent building equipment including elevators and HVAC system.
      - 2) Additional temporary power required by other trades to be furnished, at their cost, up to the power available.
  - 3. The electrical requirements for all temporary heating and ventilating systems shall be connected directly to the project temporary power system until the primary service is installed.
  - 4. Temporary lighting distribution to be made from the temporary panels indicated above. Each circuit shall consist of "pigtail" receptacles on 20 foot centers with 200 watt lamps installed in every other receptacle leaving the alternate receptacles for added concentration of lighting as needed. Wire fixtures with #8 AWG wire and suspend at least 10'-6" above the floor.
    - a. As interior partitions are erected, revise the temporary lighting arrangements so that not less than 1 lamp is provided in each space if needed for work or required for safety. Also, install lights as directed by General Contractor, in smaller areas where required to provide adequate light for work being carried out in the space.
    - b. Receptacle Outlets: See temporary light and power.
    - c. Furnish and install 200 Watt lamps for general circuit lighting and all fuses as may be required for a complete job.
    - d. Replace lamps, fuses, including theft, throughout the life of the project.
    - e. Install and maintain a reasonably balanced system and take current readings on the feeders at regular intervals as required. Correct any serious phase unbalance.
    - f. Protect the installation against weather damage, normal operations of other trades, and other persons on the site. Be responsible for the proper use and maintenance of temporary wiring systems until they are removed.

**1.07 TELECOMMUNICATIONS SERVICES**

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
  - 1. Windows-based personal computer dedicated to project telecommunications, with necessary software and laser printer.
  - 2. Internet Connections: Minimum of one; DSL modem or faster.

#### **1.08 TEMPORARY SANITARY FACILITIES**

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Use of existing facilities is not permitted.
- C. New permanent facilities may not be used during construction operations.
- D. Maintain daily in clean and sanitary condition.
- E. At end of construction, return facilities to same or better condition as originally found.

#### **1.09 BARRIERS**

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

#### **1.10 FENCING**

- A. Construction: Commercial grade chain link fence.
- B. Provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

#### **1.11 EXTERIOR ENCLOSURES**

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

#### **1.12 INTERIOR ENCLOSURES**

- A. Provide temporary partitions as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and gypsum board sheet materials with closed joints and sealed edges at intersections with existing surfaces:
  - 1. Maximum flame spread rating of 25 in accordance with ASTM E84.
- C. Provide all shoring and bracing required for safety and proper execution of the work. Remove the items when the work is completed.
- D. Paint surfaces exposed to view from Owner-occupied areas.

#### **1.13 WEATHER PROTECTION**

- A. Protect work and existing or adjacent property against weather, to maintain their work, materials, apparatus and fixtures free from injury or damage in accordance with the General conditions during the entire construction period. Work damaged by failure to provide weather protection all be removed and replaced with new work at the contractor's expense.
- B. Provide temporary non-staining waterproof coverings to close-off cavities and shed water to exterior and lap wall assemblies not less than 4 inches. Maintain in watertight condition until permanent coverings are in place.
- C. Remove all snow and ice as may be required for proper protection and execution of the work and protect and safety of the public.

#### **1.14 SECURITY**

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

#### **1.15 VEHICULAR ACCESS AND PARKING**

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities, Construction Manager and Owner.
- C. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.
- D. Provide and maintain access to fire hydrants, free of obstructions. Leave fire lanes and aisles to fire fighting equipment unobstructed at all times. Do not pile material in front of fire equipment, fire doors, or hydrants.
- E. Provide means of removing mud from vehicle wheels before entering streets.
- F. Designated existing on-site roads may be used for construction traffic.
- G. Construct and maintain temporary roads accessing public thoroughfares to serve construction area. Extend and relocate as Work progress requires. Provide detours necessary for unimpeded traffic flow.
- H. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
- I. Existing parking areas may be used for construction parking.
  - 1. Do not obstruct egress to and from parking areas unless authorized by Project Coordinator and/or Owner.
- J. Parking of private vehicles of workers shall be in an area allocated by Project Coordinator and/or Owner.

#### **1.16 WASTE REMOVAL**

- A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.
- B. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition. Locate in area designated by Owner and Construction Manager.
- C. Provide containers with lids. Remove trash from site periodically, legally disposing of waste materials, debris and rubbish off site and off Owner's property.
- D. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- E. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.
- F. Remove waste materials, debris, and rubbish from building daily.
- G. Carts, trucks, etc. used to transport materials shall be loaded in a safe manner. Materials shall not protrude beyond the sides of conveyance used.
- H. Materials shall not be thrown or dropped from scaffolds or other overhead areas.
- I. Gasoline or other highly flammable liquids shall not be brought inside facilities.

#### **1.17 PROJECT IDENTIFICATION**

- A. Provide project identification sign of design, construction, and location approved by Owner.
- B. No other signs are allowed without Owner permission except those required by law.

**1.18 FIELD OFFICES**

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture and drawing display table.
  - 1. Review proposed location within Project Site with Project Coordinator and Owner.
  - 2. Provide space for Project meetings, with table and chairs to accommodate 10 persons.
- B. Locate offices a minimum distance of 30 feet from existing and new structures.
- C. Field Offices shall be maintained until final acceptance and then be removed by the responsible party, no later than fifteen (15) days after acceptance of building, unless the Construction Manager orders or approves earlier removal.
- D. Expenses:
  - 1. Project Coordinator: All expenses in connection with his Field Offices, including the installation costs and use of telephones, heat, air-conditioning, light, water and janitor service shall be paid for by the Project Coordinator.
  - 2. Contractors: All expenses associated with their offices including utility installation costs shall be included in their bid.
- E. Each Contractor: To keep a complete set of drawings, and specifications kept marked up to date with revision, Addenda, as-built drawings, and all permits and approved shop drawings on file.

**1.19 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS**

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 4 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore existing facilities used during construction to original condition.
- E. Restore new permanent facilities used during construction to specified condition.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**



**SECTION 01 60 00**  
**PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General product requirements.
- B. Re-use of existing products.
- C. Transportation, handling, storage and protection.
- D. Product option requirements.
- E. Substitution limitations.
- F. Procedures for Owner-supplied products.
- G. Maintenance materials, including extra materials, spare parts, tools, and software.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 10 00 - Summary: Identification of Owner-supplied products.
- B. Section 01 60 10 - Substitution Procedures: Substitutions made during construction phases.
- C. Section 01 60 10.01 - Substitution Request Form
- D. Section 01 40 00 - Quality Requirements: Product quality monitoring.
- E. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Requirements for VOC-restricted product categories.
- F. Section 01 74 19 - Construction Waste Management and Disposal: Waste disposal requirements potentially affecting product selection, packaging and substitutions.

**1.03 SUBMITTALS**

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
  - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

**PART 2 PRODUCTS**

**2.01 EXISTING PRODUCTS**

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.
- C. Specific Products to be Reused: The reuse of certain materials and equipment already existing on the project site is anticipated.
  - 1. See drawings for list of items required to be salvaged for reuse and relocation.
  - 2. If reuse of other existing materials or equipment is desired, submit substitution request.

## **2.02 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. See Section 01 40 00 - Quality Requirements, for additional source quality control requirements.
- C. Use of products having any of the following characteristics is not permitted:
  - 1. Made using or containing CFC's or HCFC's.
  - 2. Made of wood from newly cut old growth timber.
  - 3. Containing lead, cadmium, or asbestos.
- D. Where other criteria are met, Contractor shall give preference to products that:
  - 1. If used on interior, have lower emissions, as defined in Section 01 61 16.
  - 2. If wet-applied, have lower VOC content, as defined in Section 01 61 16.
  - 3. Are extracted, harvested, and/or manufactured closer to the location of the project.
  - 4. Have longer documented life span under normal use.
  - 5. Result in less construction waste.

## **2.03 PRODUCT OPTIONS**

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

## **2.04 MAINTENANCE MATERIALS**

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver and place in location as directed; obtain receipt prior to final payment.

## **PART 3 EXECUTION**

### **3.01 SUBSTITUTION LIMITATIONS**

- A. See Section 01 60 10 - Substitution Procedures.

### **3.02 OWNER-SUPPLIED PRODUCTS**

- A. See Section 01 10 00 - Summary and Drawings for identification of Owner-supplied products.
- B. Owner's Responsibilities:
  - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
  - 2. Arrange and pay for product delivery to site.
  - 3. On delivery, inspect products jointly with Contractor.
  - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
  - 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
  - 1. Review Owner reviewed shop drawings, product data, and samples.
  - 2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
  - 3. Handle, store, install and finish products.
  - 4. Repair or replace items damaged after receipt.

### **3.03 TRANSPORTATION AND HANDLING**

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.



- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

**3.04 STORAGE AND PROTECTION**

- A. Provide protection of stored materials and products against theft, casualty, or deterioration.
- B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- C. Store and protect products in accordance with manufacturers' instructions.
- D. Store with seals and labels intact and legible.
- E. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- F. For exterior storage of fabricated products, place on sloped supports above ground.
- G. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- H. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- I. Comply with manufacturer's warranty conditions, if any.
- J. Do not store products directly on the ground.
- K. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- L. Prevent contact with material that may cause corrosion, discoloration, or staining.
- M. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- N. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

**END OF SECTION**



**SECTION 01 60 10**  
**SUBSTITUTION PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedural requirements for proposed substitutions.

**1.02 RELATED REQUIREMENTS**

- A. Instructions to Bidders: Restrictions on timing of substitution requests.
- B. Section 01 30 00 - Administrative Requirements: Submittal procedures, coordination.
- C. Section 01 60 00 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling.
- D. Section 01 60 10.01 - Substitution Request Form
- E. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Restrictions on emissions of indoor substitute products.

**1.03 DEFINITIONS**

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
  - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
    - a. Unavailability.
    - b. Regulatory changes.
  - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
    - a. Substitution Requests made after contract award and for the Contractor's convenience will be subject to review fees, and possibly redesign fees, by the design team. These will be processed as a deductive change order to the contractor and paid to the design team by the Owner.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 GENERAL REQUIREMENTS**

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
  - 2. Agrees to provide the same warranty for the substitution as for the specified product.
  - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
  - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
  - 5. Waives claims for additional costs or time extension that may subsequently become apparent.
  - 6. Agrees to reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- B. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
  - 1. Note explicitly any non-compliant characteristics.

- C. Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
  - 1. Forms included in the Project Manual are adequate for this purpose, and must be used.
- D. Limit each request to a single proposed substitution item.
  - 1. Submit an electronic document, combining the request form with supporting data into single document.

### **3.02 SUBSTITUTION PROCEDURES DURING PROCUREMENT**

- A. Submittal Time Restrictions:
  - 1. Instructions to Bidders specifies time restrictions and the documents required for submitting substitution requests during the bidding period.
- B. Submittal Form (before award of contract):
  - 1. Submit substitution requests by completing the form provided in Section 01 60 10.01. See this form for additional information and instructions. Use only this form; other forms of submission are unacceptable.

### **3.03 SUBSTITUTION PROCEDURES DURING CONSTRUCTION**

- A. Submittal Form (after award of contract):
  - 1. Submit substitution requests by completing the form provided in Section 01 60 10.01. See this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- C. Submit request for Substitution for Convenience within 14 days of discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
  - 1. Contractor is responsible for ensuring that the proposed substitution is of equal to or superior to the basis of design in performance, appearance, quality and function prior to Architect's review.
  - 2. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
  - 3. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.
  - 4. Bear the costs engendered by proposed substitution of:
    - a. Owner's compensation to the Architect for any required redesign, time spent processing and evaluating the request. These will be processed as a deductive change order to the contractor and paid to the design team by the Owner.
    - b. Other construction by Owner.
    - c. Other unanticipated project considerations.
- D. Substitutions will not be considered under one or more of the following circumstances:
  - 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.

### **3.04 RESOLUTION**

- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
- B. Architect will notify Contractor in writing of decision to accept or reject request.
  - 1. Architect's decision following review of proposed substitution will be noted on the submitted form.

**3.05 ACCEPTANCE**

- A. Accepted substitutions change the work of the Project. They will be documented and incorporated into work of the project by Change Order, Construction Change Directive, Architectural Supplementary Instructions, or similar instruments provided for in the Conditions of the Contract.

**3.06 CLOSEOUT ACTIVITIES**

- A. See Section 01 78 00 - Closeout Submittals, for closeout submittals.
- B. Include completed Substitution Request Forms as part of the Project record.

**3.07 ATTACHMENTS**

- A. A facsimile of the Substitution Request Form required to be used on the Project is included after this section.

**END OF SECTION**



**SECTION 01 60 10.01**  
**SUBSTITUTION REQUEST FORM**

We hereby submit for your consideration the following product instead of the specified item for the following project:

PROJECT TITLE \_\_\_\_\_ PROJECT NO. \_\_\_\_\_  
DRAWING NO. \_\_\_\_\_ DRAWING TITLE \_\_\_\_\_  
SPEC. SECTION SPEC. TITLE PARAGRAPH SPECIFIED ITEM  
\_\_\_\_\_

Proposed Substitution: \_\_\_\_\_

Attach complete information on changes to Drawings and/or Specifications which proposed substitution will require for its proper installation.

Submit, with request, all necessary samples and substantiating data to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance.

**Substitutions of the materials and equipment described in the Contract Documents will be considered during the bidding period upon receipt or a written request to the Architect for approval during period identified in Instructions to Bidders. Verbal or written requests without the completed Substitution Request Form will not be considered.**

CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY FOR EQUAL PERFORMANCE

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

Submitted by:

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Firm

\_\_\_\_\_  
Address

\_\_\_\_\_  
Telephone                      Email                      Date

Signature shall be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

**Fill in Blanks Below:**

- A. Does the substitution affect dimensions shown on Drawings?                      Yes                      No  
If yes, clearly indicate changes:

\_\_\_\_\_  
\_\_\_\_\_

- B. Will the undersigned pay for changes to the building design, including engineering and detailing costs caused by the requested substitution?                      Yes                      No

If no, fully explain:

\_\_\_\_\_

\_\_\_\_\_

C. What effect does substitution have on other Contracts or other trades?

\_\_\_\_\_

\_\_\_\_\_

D. What effect does substitution have on construction schedule?

\_\_\_\_\_

\_\_\_\_\_

E. Manufacturer's warranties of the proposed and specified items are:

\_\_\_\_\_ Same \_\_\_\_\_ Different (Explain on Attachment)

F. Reason for Request:

\_\_\_\_\_

\_\_\_\_\_

G. Itemized comparison of specified item(s) with the proposed substitution.

List significant variations:

\_\_\_\_\_

\_\_\_\_\_

H. Accurate cost data comparing proposed substitution with product specified:

\_\_\_\_\_

\_\_\_\_\_

I. Designation of maintenance services and sources:

\_\_\_\_\_

\_\_\_\_\_

(ATTACH ADDITIONAL SHEETS IF REQUIRED)

**FOR USE BY DESIGN PROFESSIONAL:**

\_\_\_\_\_ Recommended \_\_\_\_\_ Recommended as Noted

\_\_\_\_\_ Not Recommended \_\_\_\_\_ Received Too Late

Signed By \_\_\_\_\_

Date \_\_\_\_\_

**FOR USE BY OWNER'S REPRESENTATIVE OR OWNER:**

\_\_\_\_\_ Approved \_\_\_\_\_ Approved as Noted

\_\_\_\_\_ Not Approved \_\_\_\_\_ Approved Too Late

Signed By \_\_\_\_\_

Date \_\_\_\_\_

**END OF SECTION**



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

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Requirements for Indoor-Emissions-Restricted products.
- B. Requirements for VOC-Content-Restricted products.
- C. Requirement for installer certification that they did not use any non-compliant products.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 30 00 - Administrative Requirements: Submittal procedures.
- B. Section 01 40 00 - Quality Requirements: Procedures for testing and certifications.
- C. Section 01 60 00 - Product Requirements: Fundamental product requirements, substitutions and product options, delivery, storage, and handling.

**1.03 DEFINITIONS**

- A. Indoor-Emissions-Restricted Products: All products in the following product categories, whether specified or not:
  - 1. Interior paints and coatings applied on site.
  - 2. Interior adhesives and sealants applied on site, including flooring adhesives.
  - 3. Flooring.
  - 4. Composite wood.
  - 5. Products making up wall and ceiling assemblies.
  - 6. Thermal and acoustical insulation.
- B. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
  - 1. Interior paints and coatings applied on site.
  - 2. Interior adhesives and sealants applied on site, including flooring adhesives.
- C. Interior of Building: Anywhere inside the exterior weather barrier.
- D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.
- F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
  - 1. Concrete.
  - 2. Clay brick.
  - 3. Metals that are plated, anodized, or powder-coated.
  - 4. Glass.
  - 5. Ceramics.
  - 6. Solid wood flooring that is unfinished and untreated.

**1.04 REFERENCE STANDARDS**

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.
- B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings.

- C. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers.
- D. CARB (ATCM) - Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products; California Air Resources Board.
- E. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board.
- F. CHPS (HPPD) - High Performance Products Database.
- G. CRI (GLP) - Green Label Plus Testing Program - Certified Products; [www.carpet-rug.org](http://www.carpet-rug.org).
- H. GreenSeal GS-36 - Adhesives for Commercial Use.
- I. SCAQMD 1113 - Architectural Coatings.
- J. SCAQMD 1168 - Adhesive and Sealant Applications.
- K. SCS (CPD) - SCS Certified Products.
- L. UL (GGG) - GREENGUARD Gold Certified Products.

#### 1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.
- C. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

#### 1.06 QUALITY ASSURANCE

- A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
  - 1. Wet-Applied Products: State amount applied in mass per surface area.
  - 2. Paints and Coatings: Test tinted products, not just tinting bases.
  - 3. Evidence of Compliance: Acceptable types of evidence are the following;
    - a. Current UL (GGG) certification.
    - b. Current SCS (CPD) Floorscore certification.
    - c. Current SCS (CPD) Indoor Advantage Gold certification.
    - d. Current listing in CHPS (HPPD) as a low-emitting product.
    - e. Current CRI (GLP) certification.
    - f. Test report showing compliance and stating exposure scenario used.
  - 4. Product data submittal showing VOC content is NOT acceptable evidence.
  - 5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.
- B. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
  - 1. Evidence of Compliance: Acceptable types of evidence are:
    - a. Report of laboratory testing performed in accordance with requirements.
    - b. Published product data showing compliance with requirements.
    - c. Certification by manufacturer that product complies with requirements.
- C. Composite Wood Emissions Standard: CARB (ATCM) for ultra-low emitting formaldehyde (ULEF) resins.
  - 1. Evidence of Compliance: Acceptable types of evidence are:
    - a. Current SCS "No Added Formaldehyde (NAF)" certification; [www.scs-certified.com](http://www.scs-certified.com).
    - b. Report of laboratory testing performed in accordance with requirements.

- c. Published product data showing compliance with requirements.
  - d. Certification by manufacturer that product complies with requirements.
- D. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.
- B. Indoor-Emissions-Restricted Products: Comply with Indoor Emissions Standard and Test Method, except for:
  - 1. Composite Wood, Wood Fiber, and Wood Chip Products: Comply with Composite Wood Emissions Standard or contain no added formaldehyde resins.
  - 2. Inherently Non-Emitting Materials.
- C. VOC-Content-Restricted Products: VOC content not greater than required by the following:
  - 1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
  - 2. Aerosol Adhesives: GreenSeal GS-36.
  - 3. Joint Sealants: SCAQMD 1168 Rule.
  - 4. Paints and Coatings: Each color; most stringent of the following:
    - a. 40 CFR 59, Subpart D.
    - b. SCAQMD 1113 Rule.
    - c. CARB (SCM).

**PART 3 EXECUTION**

**3.01 FIELD QUALITY CONTROL**

- A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
- B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

**END OF SECTION**



**SECTION 01 70 00**  
**EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.
- C. Pre-installation meetings.
- D. Cutting and patching.
- E. Surveying for laying out the work.
- F. Cleaning and protection.
- G. Starting of systems and equipment.
- H. Demonstration and instruction of Owner personnel.
- I. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- J. General requirements for maintenance service.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 10 00 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, Electronic document submittal service.
- C. Section 01 40 00 - Quality Requirements: Testing and inspection procedures.
- D. Section 01 50 00 - Temporary Facilities and Controls: Temporary interior partitions.
- E. Section 01 78 00 - Closeout Submittals: Project record documents, operation and maintenance data, warranties .
- F. Section 02 41 00 - Demolition: Demolition of whole structures and parts thereof; disposal.
- G. Individual Product Specification Sections:
  - 1. Advance notification to other sections of openings required in work of those sections.

**1.03 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Survey work: Submit name, address, and telephone number of Surveyor before starting survey work.
  - 1. On request, submit documentation verifying accuracy of survey work.
  - 2. Submit a copy of site drawing signed by the Land Surveyor, that the elevations and locations of the work are in compliance with Contract Documents.
  - 3. Submit surveys and survey logs for the project record.
- C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
  - 1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences. Include design drawings and calculations for bracing and shoring.
  - 2. Identify demolition firm and submit qualifications.
  - 3. Include a summary of safety procedures.

- D. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
  - 1. Structural integrity of any element of Project.
  - 2. Integrity of weather exposed or moisture resistant element.
  - 3. Efficiency, maintenance, or safety of any operational element.
  - 4. Visual qualities of sight exposed elements.
  - 5. Work of Owner or separate Contractor.
  - 6. Include in request:
    - a. Identification of Project.
    - b. Location and description of affected work.
    - c. Necessity for cutting or alteration.
    - d. Description of proposed work and products to be used.
    - e. Effect on work of Owner or separate Contractor.
    - f. Written permission of affected separate Contractor.
    - g. Date and time work will be executed.
- E. Project Record Documents: Accurately record actual locations of capped and active utilities.

#### **1.05 QUALIFICATIONS**

- A. For surveying work, employ a land surveyor registered in the State in which the Project is located and acceptable to Architect. Submit evidence of surveyor's Errors and Omissions insurance coverage in the form of an Insurance Certificate. Employ only individual(s) trained and experienced in collecting and recording accurate data relevant to ongoing construction activities,
- B. For field engineering, employ a professional engineer of the discipline required for specific service on Project, licensed in the State in which the Project is located. Employ only individual(s) trained and experienced in establishing and maintaining horizontal and vertical control points necessary for laying out construction work on project of similar size, scope and/or complexity.
- C. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

#### **1.06 PROJECT CONDITIONS**

- A. Use of explosives is not permitted.
- B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- D. Perform dewatering activities, as required, for the duration of the project.
- E. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- F. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
  - 1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
- G. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
  - 1. See civil and SWPPP for additional requirements.
  - 2. Minimize amount of bare soil exposed at one time.
  - 3. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
  - 4. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

- 5. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- H. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
  - 1. Indoors: Limit conduct of especially noisy interior work to the hours of 6 pm to 7 am.
- I. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- J. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

### **1.07 COORDINATION**

- A. See Section 01 10 00 for occupancy-related requirements.
- B. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate sections.
- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## **PART 2 PRODUCTS**

### **2.01 PATCHING MATERIALS**

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.

- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### **3.03 PREINSTALLATION MEETINGS**

- A. When required in individual specification sections, convene a preinstallation meeting at the site prior to commencing work of the section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific section.
- C. Notify Architect five days in advance of meeting date.
- D. Prepare agenda and preside at meeting:
  1. Review conditions of examination, preparation and installation procedures.
  2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.04 LAYING OUT THE WORK**

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Contractor shall locate and protect survey control and reference points.
- D. Control datum for survey is that established by Owner provided survey.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- F. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- H. Utilize recognized engineering survey practices.
- I. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
- J. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
  1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
  2. Grid or axis for structures.
  3. Building foundation, column locations, ground floor elevations.
  4. Controlling lines and levels required for mechanical and electrical trades.



- K. Periodically verify layouts by same means.
- L. Maintain a complete and accurate log of control and survey work as it progresses.
- M. On completion of foundation walls and major site improvements, prepare a certified survey illustrating dimensions, locations, angles, and elevations of construction and site work.

### **3.05 GENERAL INSTALLATION REQUIREMENTS**

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- F. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.06 ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as indicated.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
  - 1. Provide, erect, and maintain temporary dustproof partitions of construction sufficient to control the spread of fine particulates .
- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
  - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
  - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
  - 3. Where new penetrations are made through the roof, protect openings from water and cold temperatures until patches are made. Coordinate work to minimize time temporary protection is required.
- D. Remove existing work as indicated and as required to accomplish new work.
  - 1. Notify Architect if rotted wood, corroded metals, and deteriorated masonry and concrete are encountered which were not indicated to be removed; do not proceed until it is determined if replacement with new construction is required.
  - 2. Remove items indicated on drawings.
  - 3. Relocate items indicated on drawings.
  - 4. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 5. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.

1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
  2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
  3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
    - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    - b. See Section 01 10 00 for other limitations on outages and required notifications.
    - c. Provide temporary connections as required to maintain existing systems in service.
  4. Verify that abandoned services serve only abandoned facilities.
  5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- F. Protect existing work to remain.
1. Prevent movement of structure; provide shoring and bracing if necessary.
  2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  3. Repair adjacent construction and finishes damaged during removal work.
- G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
1. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.
  2. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.
  3. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for Architect review and request instructions.
- H. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- I. Refinish existing surfaces as indicated:
1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- J. Clean existing systems and equipment.
- K. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- L. Do not begin new construction in alterations areas before demolition is complete.
- M. Comply with all other applicable requirements of this section.

### **3.07 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  1. Complete the work.
  2. Fit products together to integrate with other work.
  3. Provide openings for penetration of mechanical, electrical, and other services.

4. Match work that has been cut to adjacent work.
  5. Repair areas adjacent to cuts to required condition.
  6. Repair new work damaged by subsequent work.
  7. Remove samples of installed work for testing when requested.
  8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
  - E. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
  - F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
  - G. Restore work with new products in accordance with requirements of Contract Documents.
  - H. Fit work tightly to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
  - I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 84 00, to full thickness of the penetrated element.
  - J. Patching:
    1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
    2. Match color, texture, and appearance.
    3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.08 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site weekly and dispose off-site; do not burn or bury.

### **3.09 PROTECTION OF EXISTING AND INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Protect work from spilled liquids. If work is exposed to spilled liquids, immediately remove protective coverings, dry out work, and replace protective coverings.
- G. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

### **3.10 SYSTEM STARTUP**

- A. Coordinate schedule for start-up of various equipment and systems.

- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel in accordance with manufacturers' instructions.
- F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

### **3.11 DEMONSTRATION AND INSTRUCTION**

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- D. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of Owner's personnel.
- E. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owner's personnel in detail to explain all aspects of operation and maintenance.
- F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

### **3.12 ADJUSTING**

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
- B. Testing, adjusting, and balancing HVAC systems: See Section 23 05 93 - Testing, Adjusting, and Balancing for HVAC.

### **3.13 FINAL CLEANING**

- A. Execute final cleaning prior to Substantial Completion.
  - 1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.
  - 2. Review cleaning with Owner's maintenance staff.
- B. Use cleaning materials that are nonhazardous.
- C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Replace filters of operating equipment.
- G. Clean debris from roofs and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.

- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.
- J. Clean Owner-occupied areas of work.

### **3.14 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
  - 1. Provide copies to Architect and Owner.
- B. Accompany Contractor and/or Owner on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

### **3.15 MAINTENANCE**

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

**END OF SECTION**



## SECTION 01 74 19

### CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

#### PART 1 GENERAL

##### 1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requests that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Owner may decide to pay for additional recycling, salvage, and/or reuse based on Landfill Alternatives Proposal specified below.
- E. Required Recycling, Salvage, and Reuse: The following may not be disposed of in landfills or by incineration:
  - 1. Aluminum and plastic beverage containers.
  - 2. Corrugated cardboard.
  - 3. Wood pallets.
  - 4. Clean dimensional wood: May be used as blocking or furring.
  - 5. Land clearing debris, including brush, branches, logs, and stumps; see Section 31 10 00 - Site Clearing for use options.
  - 6. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
- F. Recycling incentive programs are mandatory for this project; Contractor is responsible for implementation:
  - 1. Rebates and credits must be applied for by Owner and will accrue to Owner.
- G. Contractor Reporting Responsibilities: Submit periodic Waste Disposal Reports; report landfill disposal, incineration, recycling, salvage, and reuse regardless of to whom the cost or savings accrues; use the same units of measure on required reports.
- H. Develop and follow a Waste Management Plan designed to implement these requirements.
- I. The following sources may be useful in developing the Waste Management Plan:
  - 1. State Recycling Department, at [www.ecology.wa.gov/recycleright](http://www.ecology.wa.gov/recycleright).
- J. Methods of trash/waste disposal that are not acceptable are:
  - 1. Burning on the project site.
  - 2. Burying on the project site.
  - 3. Dumping or burying on other property, public or private.
  - 4. Other illegal dumping or burying.
- K. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 - Summary: List of items to be salvaged from the existing building for relocation in project or for Owner.
- B. Section 01 30 00 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

- C. Section 01 50 00 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- D. Section 01 60 00 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- E. Section 01 70 00 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

**1.03 DEFINITIONS**

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.
- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Landfill Alternatives Proposal: Within 10 calendar days after receipt of Notice to Proceed, or prior to any trash or waste removal, whichever occurs sooner, submit a projection of trash/waste that will require disposal and alternatives to landfilling, with net costs.
  - 1. Submit to Architect for Owner's review and approval.
  - 2. If Owner wishes to implement any cost alternatives, the Contract Sum will be adjusted as specified elsewhere.
  - 3. Include an analysis of trash/waste to be generated and landfill options as specified for Waste Management Plan described below.
  - 4. Describe as many alternatives to landfilling as possible:



- a. List each material proposed to be salvaged, reused, or recycled.
  - b. List the proposed local market for each material.
  - c. State the estimated net cost resulting from each alternative, after subtracting revenue from sale of recycled or salvaged materials and landfill tipping fees saved due to diversion of materials from the landfill.
5. Provide alternatives to landfilling for at least the following materials:
- a. Concrete.
  - b. Bricks.
  - c. Concrete masonry units.
  - d. Asphalt paving.
  - e. Glass.
  - f. Gypsum drywall and plaster.
  - g. Plastic buckets.
  - h. Carpet, carpet cushion, carpet tile, and carpet remnants, both new and removed: DuPont (<http://flooring.dupont.com>) and Interface ([www.interfaceinc.com](http://www.interfaceinc.com)) conduct reclamation programs.
  - i. Paint.
  - j. Plastic sheeting.
  - k. Rigid foam insulation.
  - l. Windows, doors, and door hardware.
  - m. Plumbing fixtures.
  - n. Mechanical and electrical equipment.
  - o. Fluorescent lamps (light bulbs).
  - p. Acoustical ceiling tile and panels.
- C. Once Owner has determined which of the landfill alternatives addressed in the Proposal above are acceptable, prepare and submit Waste Management Plan; submit within 10 calendar days after notification by Architect.
- D. Waste Management Plan: Include the following information:
- 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
  - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
  - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
    - a. List each material proposed to be salvaged, reused, or recycled.
    - b. List the local market for each material.
    - c. State the estimated net cost, versus landfill disposal.
  - 4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
  - 5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
  - 6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
  - 7. Recycling Incentives: Describe procedures required to obtain credits, rebates, or similar incentives.
- E. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.

1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
  2. Submit Report on a form acceptable to Owner.
  3. Landfill Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards, of trash/waste material from the project disposed of in landfills.
    - c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  4. Incinerator Disposal: Include the following information:
    - a. Identification of material.
    - b. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
    - c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  5. Recycled and Salvaged Materials: Include the following information for each:
    - a. Identification of material, including those retrieved by installer for use on other projects.
    - b. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
    - c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
    - d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
    - e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
  6. Material Reused on Project: Include the following information for each:
    - a. Identification of material and how it was used in the project.
    - b. Amount, in tons or cubic yards.
    - c. Include weight tickets as evidence of quantity.
  7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.
- F. Recycling Incentive Programs:
1. Where revenue accrues to Contractor, submit copies of documentation required to qualify for incentive.
  2. Where revenue accrues to Owner, submit any additional documentation required by Owner in addition to information provided in periodic Waste Disposal Report.

## **PART 2 PRODUCTS**

### **2.01 PRODUCT SUBSTITUTIONS**

- A. See Section 01 60 00 - Product Requirements for substitution submission procedures.
- B. For each proposed product substitution, submit the following information in addition to requirements specified in Section 01 60 00:
  1. Relative amount of waste produced, compared to specified product.
  2. Cost savings on waste disposal, compared to specified product, to be deducted from the Contract Sum.
  3. Proposed disposal method for waste product.
  4. Markets for recycled waste product.

## **PART 3 EXECUTION**

### **3.01 WASTE MANAGEMENT PROCEDURES**

- A. See Section 01 10 00 for list of items to be salvaged from the existing building for relocation in project or for Owner.
- B. See Section 01 30 00 for additional requirements for project meetings, reports, submittal procedures, and project documentation.
- C. See Section 01 50 00 for additional requirements related to trash/waste collection and removal facilities and services.
- D. See Section 01 60 00 for waste prevention requirements related to delivery, storage, and handling.
- E. See Section 01 70 00 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

### **3.02 WASTE MANAGEMENT PLAN IMPLEMENTATION**

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings, particularly at:
  - 1. Prebid meeting.
  - 2. Preconstruction meeting.
  - 3. Regular job-site meetings.
  - 4. Job safety meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
  - 1. As a minimum, provide:
    - a. Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
    - b. Separate dumpsters for each category of recyclable.
    - c. Recycling bins at worker lunch area.
  - 2. Provide containers as required.
  - 3. Provide temporary enclosures around piles of separated materials to be recycled or salvaged.
  - 4. Provide materials for barriers and enclosures that are nonhazardous, recyclable, or reusable to the maximum extent possible; reuse project construction waste materials if possible.
  - 5. Locate enclosures out of the way of construction traffic.
  - 6. Provide adequate space for pick-up and delivery and convenience to subcontractors.
  - 7. If an enclosed area is not provided, clearly lay out and label a specific area on-site.
  - 8. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

**END OF SECTION**

**SECTION 01 78 00**  
**CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

**1.02 RELATED REQUIREMENTS**

- A. DFCM General Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 01 30 00 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Section 01 70 00 - Execution and Closeout Requirements: Contract closeout procedures.
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  - 2. Submit one copy of completed documents 30 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 3. Submit one electronic set of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.

- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.
  - 2. Product substitutions or alternates utilized.
  - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
  - 1. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  - 2. Field changes of dimension and detail.
  - 3. Details not on original Contract drawings.

### **3.02 OPERATION AND MAINTENANCE DATA**

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

### **3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES**

- A. For Each Product, Applied Material, and Finish:
  - 1. Product data, with catalog number, size, composition, and color and texture designations.
  - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

### **3.04 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS**

- A. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- B. Arrangement of Contents: Organize each volume in parts as follows:
  - 1. Project Directory.
  - 2. Table of Contents, of all volumes, and of this volume.
  - 3. Operation and Maintenance Data: Arranged by system, then by product category.
    - a. Source data.
    - b. Product data, shop drawings, and other submittals.

- c. Operation and maintenance data.
- d. Field quality control data.
- e. Original warranties and bonds.

### **3.05 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include copies of each in operation and maintenance manuals, indexed separately on Table of Contents.

**END OF SECTION**





## SECTION 02 41 00

### DEMOLITION

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Selective demolition of building elements for alteration purposes.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 10 00 - Summary: Sequencing and staging requirements.
- C. Section 01 10 00 - Summary: Description of items to be salvaged or removed for re-use by Contractor.
- D. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- E. Section 01 60 00 - Product Requirements: Handling and storage of items removed for salvage and relocation.
- F. Section 01 70 00 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.
- G. Section 01 74 19 - Construction Waste Management and Disposal: Limitations on disposal of removed materials; requirements for recycling.

##### 1.03 DEFINITIONS

- A. Demolition: Dismantle, raze, destroy or wreck any building or structure or any part thereof.
- B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.
- C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.
- D. Remove and Reinstall: Detach or dismantle items from existing construction in a manner to prevent damage. Clean and prepare for reuse and reinstall where indicated.
- E. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

##### 1.04 REFERENCE STANDARDS

- A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

##### 1.05 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

##### 1.06 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Site Plan: Indicate:
  - 1. Vegetation to be protected.
  - 2. Areas for temporary construction and field offices.
  - 3. Areas for temporary and permanent placement of removed materials.
- C. Demolition Plan: Submit demolition plan as required by OSHA and local AHJs.
  - 1. Indicate extent of demolition, removal sequencing, bracing and shoring, and location and construction of barricades and fences.

2. Summary of safety procedures.
3. Schedule of building demolition activities with starting and ending dates for each activity.
4. Include measures for environmental protection, for dust control, and for noise control.
5. Detail special measures proposed to protect adjacent buildings or spaces to remain including means of egress.

D. Inventory of items that have been removed and salvaged.

#### **1.07 QUALITY ASSURANCE**

A. Standards: Comply with ASSE A10.6 and NFPA 241.

#### **1.08 FIELD CONDITIONS**

- A. Building areas immediately adjacent to demolition area will be occupied. Conduct demolition so operations of occupied areas will not be disrupted.
  1. See Section 01 1000 - Summary for limitations on Contractor's use of site and premises.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
- D. On-site storage or sale of removed items or materials is not permitted.
- E. Arrange demolition schedule so as not to interfere with Owner's on-site operations or operations of adjacent occupied buildings.

### **PART 2 PRODUCTS -- NOT USED**

### **PART 3 EXECUTION**

#### **3.01 DEMOLITION**

- A. Remove portions of existing building as indicated in demolition plans.
- B. Remove other items indicated, for salvage, relocation, and recycling.
- C. Fill openings or penetrations as result of removals, firestop at rated walls as indicated in code plan.

#### **3.02 MATERIALS OWNERSHIP**

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.
  1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

#### **3.03 GENERAL PROCEDURES AND PROJECT CONDITIONS**

- A. Comply with requirements in Section 01 70 00.
- B. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
  1. Obtain required permits.
  2. Comply with applicable requirements of NFPA 241.
  3. Use of explosives is not permitted.
  4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
  5. Provide, erect, and maintain temporary barriers and security devices.
  6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
    - a. Remove temporary barriers and protections where hazards no longer exist.
    - b. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
  8. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
  9. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
  10. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- C. Do not begin removal until receipt of notification to proceed from Owner.
  - D. Do not begin removal until built elements to be salvaged or relocated have been removed.
  - E. Do not begin removal until vegetation to be relocated has been removed and vegetation to remain has been protected from damage.
    1. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
  - F. Survey existing conditions of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations. Notify Architect or Engineer of any concerns.
  - G. Protect existing structures and other elements to remain in place and not removed.
    1. Provide bracing and shoring.
    2. Prevent movement or settlement of adjacent structures.
    3. Stop work immediately if adjacent structures appear to be in danger.
  - H. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
  - I. Hazardous Materials:
    1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.
  - J. Perform demolition in a manner that maximizes salvage and recycling of materials.
    1. Comply with requirements of Section 01 74 19 - Construction Waste Management and Disposal.
    2. Dismantle existing construction and separate materials.
    3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

### **3.04 EXISTING UTILITIES**

- A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Contractor to coordinate utility shut-downs or disruptions with the Owner through the Project Coordinator. Notices shall be as identified in Division 01 sections and as agreed to at Pre-Construction meeting.
- E. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

### **3.05 SELECTIVE DEMOLITION FOR ALTERATIONS**

- A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
  1. Verify construction and utility arrangements are as indicated.

2. Report discrepancies to Architect before disturbing existing installation.
  3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Cooperate with the Owner and Authorities Having Jurisdiction to provide Interim Life Safety Measures (ILSM) in all areas affected by demolition or construction operations.
1. Ensure exits provide an unobstructed egress. Building areas under construction must maintain escape facilities for construction workers at all times. Provide alternate routes around closed or obstructed traffic-ways if required by authorities having jurisdiction.
  2. Ensure fire alarm, detection and suppression systems are not impaired. Provide temporary systems if necessary.
  3. Ensure temporary construction partitions are smoke-tight and built of non-combustible or limited combustible materials that will not contribute to the development or spread of fire.
  4. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations.
  5. Develop and enforce storage, housekeeping, and debris removal practices that reduce the flammable and combustible fire load of the building to the lowest level necessary for daily operations as stated in the general conditions.
  6. Provide hazard surveillance of building, grounds, and equipment with attention to construction areas, construction storage, and field offices.
  7. Follow NFPA 241 guidelines pertaining to safe-guarding for construction and demolition processes.
  8. Follow NFPA 1 guidelines pertaining to fire prevention measures.
- C. Separate areas in which demolition is being conducted from areas that remain occupied.
1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 .
- D. Maintain weatherproof exterior building enclosure, except for interruptions required for replacement or modifications; prevent water and humidity damage.
- E. Salvaged Items: Comply with the following:
1. Clean salvaged items of dirt and demolition debris.
  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 storage area designated by Owner.
  5. Protect items from damage during transport and storage.
- F. Remove existing work as indicated and required to accomplish new work.
1. Remove rotted wood, corroded metals, and deteriorated masonry and concrete; replace with new construction indicated.
  2. Remove items indicated on drawings.
  3. Inventory and record the condition of items to be removed and salvaged.
- G. Protect existing work to remain.
1. Prevent movement of structure. Provide shoring and bracing as required.
  2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
  3. Repair adjacent construction and finishes damaged during removal work.
  4. Patch to match new work.

### **3.06 DEBRIS AND WASTE REMOVAL**

- A. Remove debris, junk, and trash from site.
1. Do not allow demolished materials to accumulate on-site.
  2. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

3. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  4. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
  5. Project Coordinator will provide dumpster and coordinate with waste hauler for drop off and pick-up.
  6. Dumpster to be located as indicated in Drawings, or as agreed upon at Pre-Bid meeting or by Owner.
- B. Remove materials not to be reused on site; comply with requirements of Section 01 74 19 - Waste Management.
  - C. Leave site in clean condition, ready for subsequent work.
  - D. Clean up spillage and wind-blown debris from public and private lands.

**END OF SECTION**



**SECTION 06 10 53**  
**MISCELLANEOUS ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preservative treated wood materials.
- B. Concealed wood blocking, nailers, and supports.

**1.02 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.
- C. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing.
- D. AWWA U1 - Use Category System: User Specification for Treated Wood.
- E. PS 1 - Structural Plywood.
- F. PS 20 - American Softwood Lumber Standard.

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide technical data on wood preservative materials.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

**PART 2 PRODUCTS**

**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. Species: Douglas Fir-Larch, unless otherwise indicated.
  - 2. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
  - 3. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee ([www.alsc.org](http://www.alsc.org)) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

**2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, No.2 or Standard Grade.
  - 2. Boards: Standard or No.3.

**2.03 CONSTRUCTION PANELS**

- A. Applications:
  - 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.
  - 2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
  - 3. Other Locations: PS 1, C-D Plugged or better.

## **2.04 ACCESSORIES**

- A. Fasteners and Anchors:
  - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
  - 2. Anchors:
    - a. Toggle bolt type for anchorage to hollow masonry.
    - b. Expansion shield and lag bolt type for anchorage to solid masonry or concrete.
    - c. Bolt or ballistic fastener for anchorages to steel.
- B. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.

## **2.05 FACTORY WOOD TREATMENT**

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  - 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.
- B. Preservative Treatment:
  - 1. Preservative Pressure Treatment of Lumber Above Grade: AWPA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.10 lb/cu ft retention.
    - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
    - b. Treat lumber exposed to weather.
    - c. Treat lumber in contact with masonry or concrete.
    - d. Treat lumber in other locations as indicated.
  - 2. Preservative Pressure Treatment of Plywood Above Grade: AWPA U1, Use Category UC2 and UC3B, Commodity Specification F using waterborne preservative to 0.25 lb/cu ft retention.
    - a. Kiln dry plywood after treatment to maximum moisture content of 19 percent.
    - b. Treat plywood in contact with masonry or concrete.
    - c. Treat plywood in other locations as indicated.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Coordinate installation of rough carpentry members specified in other sections.

### **3.02 INSTALLATION - GENERAL**

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

### **3.03 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing or substrate.

### **3.04 CLEANING**

- A. Waste Disposal: See Section 01 74 19 - Construction Waste Management and Disposal.
  - 1. Comply with applicable regulations.
  - 2. Do not burn scrap on project site.



3. Do not burn scraps that have been pressure treated.
  4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or “waste-to-energy” facilities.
- B. Do not leave wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

**END OF SECTION**



**SECTION 06 20 00**  
**FINISH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Finish carpentry items, including:
  - 1. Removal, salvage and reinstallation of existing trim components.
- B. Site finishing.
- C. Hardware and attachment accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 10 53 - Miscellaneous Rough Carpentry: Curbs, blocking, nailers, supports, furring, grounds and backing boards.
- B. Section 09 91 23 - Interior Painting: Painting of finish carpentry items.
- C. Section 12 36 13 - Solid Surface Sills

**1.03 REFERENCE STANDARDS**

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition.
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards.
- C. NHLA G-101 - Rules for the Measurement & Inspection of Hardwood & Cypress.

**1.04 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
  - 1. Provide for components where replacement of existing items is necessary.
- B. Product Data:
  - 1. Provide data for premanufactured items and accessories.
- C. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
  - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
  - 2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).

**1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
  - 1. Company that follows AWI's "Architectural Woodwork Quality Standards".
  - 2. Single Source Responsibility: Provide and install this work from single fabricator.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver factory-fabricated units to project site in original packages, containers or bundles bearing brand name and identification.
- B. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.
- C. Protect from moisture damage.
- D. Handle materials and products to prevent damage to edges, ends, or surfaces.

**1.07 FIELD CONDITIONS**

- A. Coordinate sizes and locations of framing, blocking, furring, reinforcements, utilities, and other related work to ensure that finish carpentry items can be supported and installed as indicated.

- B. During and after installation of finish carpentry, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

## **PART 2 PRODUCTS**

### **2.01 FINISH CARPENTRY ITEMS**

- A. Quality Standard:
  - 1. Painted Components: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Interior Woodwork Items:
  - 1. Moldings, Bases, Casings, and Miscellaneous Trim: poplar or MDF; prepare for painted finish.

### **2.02 LUMBER MATERIALS**

- A. Hardwood Lumber: poplar species, plain sawn, maximum moisture content of 8 percent.
  - 1. Grading: In accordance with NHLA G-101 Grading Rules; [www.nhla.org](http://www.nhla.org).
  - 2. Application: moldings, bases, casings, and miscellaneous trim.
  - 3. Sizes and joint treatment: as indicated in Drawings.
  - 4. Finish: Painted.

### **2.03 SHEET MATERIALS**

- A. Medium Density Fiberboard (MDF): ANSI A208.2; type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated; composed of wood fibers pressure bonded with moisture resistant adhesive to suit application.
  - 1. Application: trim
    - a. Sanded face.
  - 2. Thickness: As detailed or required to match existing.
  - 3. Finish: Primed for field-finish.

### **2.04 FASTENINGS**

- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
- B. Fasteners: Of size and type to suit application; any finish in concealed locations and satin stainless steel finish in exposed locations.

### **2.05 ACCESSORIES**

- A. Lumber for Shimming: Softwood lumber of pine species.
- B. Primer: as recommended by manufacturer of finish coat.
- C. Wood Filler: Solvent base, tinted to match surface finish color.

### **2.06 SITE FINISHING MATERIALS**

- A. Field Finishing: See Section 09 91 23.

### **2.07 FABRICATION**

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.
- B. See Section 06 10 53 - Miscellaneous Rough Carpentry for installation of recessed wood blocking.

### **3.02 INSTALLATION**

- A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Do not begin installation until wood materials have been fully acclimated to interior conditions.
- C. Set and secure materials and components in place, plumb and level.
- D. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.
- E. Install trim with trim nails at stud or blocking locations.

### **3.03 PREPARATION FOR SITE FINISHING**

- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.
- B. Site Finishing: See Section 09 91 23.
- C. Before installation, prime paint surfaces of items or assemblies to be in contact with cementitious materials.

### **3.04 TOLERANCES**

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

**END OF SECTION**



**SECTION 07 21 00**  
**THERMAL INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Batt insulation for filling perimeter window and door shim spaces.

**1.02 REFERENCE STANDARDS**

- A. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C.

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

**1.04 FIELD CONDITIONS**

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

**PART 2 PRODUCTS**

**2.01 APPLICATIONS**

- A. Insulation for filling joints, crevices and shim spaces: Batt insulation

**2.02 BATT AND BLANKET INSULATION MATERIALS**

- A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
  - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
  - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
  - 4. Formaldehyde Content: Zero.
  - 5. Thickness: as indicated in Drawings.
  - 6. Facing: Unfaced.
  - 7. Products:
    - a. CertainTeed Corporation: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
    - b. Johns Manville: [www.jm.com/#sle](http://www.jm.com/#sle).
    - c. Owens Corning Corporation; EcoTouch PINK FIBERGLAS Insulation: [www.ocbuildingspec.com/#sle](http://www.ocbuildingspec.com/#sle).
    - d. Substitutions: See Section 01 60 00 - Product Requirements.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

**3.02 BATT INSTALLATION**

- A. Install insulation in accordance with manufacturer's instructions.
- B. Install in exterior wall spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

**3.03 PROTECTION**

- A. Do not permit installed insulation to be damaged prior to its concealment.

**END OF SECTION**



**SECTION 07 27 13**  
**FLEXIBLE FLASHINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Flexible flashing.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 62 00 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with air barriers.

**1.03 DEFINITIONS**

- A. Air Barrier: Airtight barrier made of material that is virtually air impermeable, and water vapor impermeable or permeable to amount as specified, with sealed seams and sealed joints to adjacent surfaces.

**1.04 REFERENCE STANDARDS**

- A. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension.
- B. ASTM D903 - Standard Test Method for Peel or Stripping Strength of Adhesive Bonds.
- C. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.

**1.05 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on material characteristics, performance criteria, and limitations.
- C. Shop Drawings: Provide drawings of special joint conditions.

**1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and provides secondary materials approved in writing by primary material manufacturer.

**1.07 FIELD CONDITIONS**

- A. Maintain temperature and humidity recommended by materials manufacturers before, during, and after installation.

**PART 2 PRODUCTS**

**2.01 ACCESSORIES**

- A. Sealants, Tapes, and Accessories for Sealing Air Barrier and Adjacent Substrates: As indicated or in compliance with air barrier manufacturer's installation instructions.
- B. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrate and air barrier materials.
  - 1. Application: Apply at 30 to 40 mil, 0.030 to 0.040 inch, nominal thickness.
  - 2. Color: as selected by Architect from manufacturers full range.
  - 3. Elongation: 1,300 percent, measured in accordance with ASTM D412.
  - 4. Peel Adhesion: 28 lb/inch, minimum, when tested in accordance with ASTM D903.
- C. Flexible Flashing: Self-adhesive sheet flashing complying with ASTM D1970/D1970M, except slip resistance requirement waived if not installed on roof.
  - 1. Width: as detailed or as recommended by manufacturer for field conditions.
  - 2. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 30 days of weather exposure.

3. Products:
  - a. DuPont de Nemours, Inc; DuPont FlexWrap: [www.dupont.com/building/#sle](http://www.dupont.com/building/#sle).
  - b. DuPont de Nemours, Inc; DuPont StraightFlash: [www.dupont.com/building/#sle](http://www.dupont.com/building/#sle).
  - c. DuPont de Nemours, Inc; DuPont VersaFlange: [www.dupont.com/building/#sle](http://www.dupont.com/building/#sle).
  - d. Henry Company; FortiFlash: [www.henry.com/#sle](http://www.henry.com/#sle).
  - e. Henry Company; FortiFlex Butyl: [www.henry.com/#sle](http://www.henry.com/#sle).
  - f. Henry Company; FortiFlash Butyl: [www.henry.com/#sle](http://www.henry.com/#sle).
  - g. Substitutions: See Section 01 60 00 - Product Requirements.
- D. Thinners and Cleaners: As recommended by material manufacturer.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that surfaces and conditions are ready for work of this section.
- B. Where existing conditions are responsibility of another installer, notify Architect of unsatisfactory conditions.
- C. Do not proceed with this work until unsatisfactory conditions have been corrected.

#### **3.02 PREPARATION**

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives and sealants in accordance with manufacturer's installation instructions.

#### **3.03 INSTALLATION**

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Install continuous airtight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Self-Adhered Sheets:
  1. Prepare substrate in accordance with sheet manufacturer's installation instructions; fill and tape joints in substrate and between dissimilar materials.
  2. Lap sheets shingle fashion to shed water and seal laps airtight.
  3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
  4. At wide joints, provide extra flexible membrane allowing joint movement.
- E. Openings and Penetrations in Exterior Air Barriers:
  1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto air barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
  2. At openings with nonflanged frames, seal air barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
  3. At head of openings, install flashing under air barrier extending at least 2 inches beyond face of jambs; seal air barrier to flashing.
  4. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
  5. Service and Other Penetrations: Form flashing around penetrating item and seal to air barrier surface.

#### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 40 00 - Quality Requirements for additional requirements.

- B. Take digital photographs of each portion of installation prior to covering up air barriers and flexible flashings.

**3.05 PROTECTION**

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

**END OF SECTION**



## SECTION 07 92 00

### JOINT SEALANTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Nonsag gunnable joint sealants.
- B. Joint backings and accessories.

##### 1.02 RELATED REQUIREMENTS

- A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.
- B. Section 09 21 16 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.

##### 1.03 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer.
- B. ASTM C834 - Standard Specification for Latex Sealants.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.
- F. ASTM C1311 - Standard Specification for Solvent Release Sealants.
- G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants.

##### 1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
  - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
  - 2. List of backing materials approved for use with the specific product.
  - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
  - 4. Substrates the product should not be used on.
  - 5. Substrates for which use of primer is required.
  - 6. Substrates for which laboratory adhesion and/or compatibility testing is required.
  - 7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
  - 8. Sample product warranty.
  - 9. Certification by manufacturer indicating that product complies with specification requirements.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- E. Installation Log: Submit filled-out log for each length or instance of sealant installed.

##### 1.05 QUALITY ASSURANCE

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

- B. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of experience.
- C. Installation Plan: Include schedule of sealed joints, including the following:
  - 1. Installation Log Form: Include the following data fields, with known information filled out.
    - a. Unique identification of each length or instance of sealant installed.
    - b. Location on project.
    - c. Substrates.
    - d. Sealant used.
    - e. Stated movement capability of sealant.
    - f. Primer to be used, or indicate no primer is used.
    - g. Size and actual backing material used.
    - h. Date of installation.
    - i. Name of installer.
    - j. Actual joint width; provide space to indicate maximum and minimum width.
    - k. Actual joint depth to face of backing material at centerline of joint.
    - l. Air temperature.

#### **1.06 FIELD CONDITIONS**

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

#### **1.07 WARRANTY**

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide 5-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.
  - 1. Silicone: 20 years

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Nonsag Sealants:
  - 1. Adhesives Technology Corporation: [www.atcepoxy.com](http://www.atcepoxy.com).
  - 2. Bostik Inc: [www.bostik-us.com](http://www.bostik-us.com).
  - 3. Chem Link, Inc: [www.chemlinkinc.com](http://www.chemlinkinc.com).
  - 4. Dow Corning Corporation: [www.dowcorning.com/construction/sle](http://www.dowcorning.com/construction/sle).
  - 5. Hilti, Inc: [www.us.hilti.com/#sle](http://www.us.hilti.com/#sle).
  - 6. Master Builders Solutions: [www.master-builders-solutions.com/en-us/#sle](http://www.master-builders-solutions.com/en-us/#sle).
  - 7. Momentive Performance Materials, Inc (formerly GE Silicones): [www.momentive.com/sle](http://www.momentive.com/sle).
  - 8. Pecora Corporation: [www.pecora.com/?sle](http://www.pecora.com/?sle).
  - 9. Sherwin-Williams Company: [www.sherwin-williams.com](http://www.sherwin-williams.com).
  - 10. Sika Corporation: [www.usa-sika.com](http://www.usa-sika.com).
  - 11. Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
  - 12. W.R. Meadows, Inc: [www.wrmeadows.com/sle](http://www.wrmeadows.com/sle).
  - 13. Substitutions: See Section 01 60 00 - Product Requirements.

#### **2.02 JOINT SEALANTS - GENERAL**

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

### 2.03 NONSAG JOINT SEALANTS

- A. Type - General Purpose Exterior Sealant - Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M, G, O and A; not expected to withstand continuous water immersion or traffic.
1. Movement Capability: Plus and minus 50 percent, minimum.
  2. Nonstaining to Porous Stone: Nonstaining to light-colored natural stone when tested in accordance with ASTM C1248.
  3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
  4. Hardness Range: 15 to 35, Shore A, when tested in accordance with ASTM C661.
  5. Color: To be selected by Architect from manufacturer's standard range.
  6. Cure Type: Single-component, neutral moisture curing.
  7. Products:
    - a. Dow; DOWSIL 756 SMS Building Sealant: [www.dow.com/#sle](http://www.dow.com/#sle).
    - b. Dow; DOWSIL 790 Silicone Building Sealant: [www.dow.com/#sle](http://www.dow.com/#sle).
    - c. Dow; DOWSIL 791 Silicone Weatherproofing Sealant: [www.dow.com/#sle](http://www.dow.com/#sle).
    - d. Dow; DOWSIL 795 Silicone Building Sealant: [www.dow.com/#sle](http://www.dow.com/#sle).
    - e. Pecora Corporation; Pecora 890 NST (Non-Staining Technology): [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - f. Pecora Corporation; Pecora 864 NST (Non-Staining Technology): [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - g. Sika Corporation; Sikasil WS-290: [www.usa.sika.com/#sle](http://www.usa.sika.com/#sle).
    - h. Sika Corporation; Sikasil WS-295: [www.usa.sika.com/#sle](http://www.usa.sika.com/#sle).
    - i. Sika Corporation; Sikasil 728NS: [www.usa.sika.com/#sle](http://www.usa.sika.com/#sle).
    - j. Tremco Commercial Sealants & Waterproofing; Spectrem 1: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - k. Tremco Commercial Sealants & Waterproofing; Spectrem 2: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - l. Tremco Commercial Sealants & Waterproofing; Spectrem 3: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - m. Tremco Commercial Sealants & Waterproofing; Tremsil 200: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - n. Tremco Commercial Sealants & Waterproofing; Tremsil 400: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - o. Tremco Commercial Sealants & Waterproofing; Tremsil 600: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - p. Substitutions: See Section 01 60 00 - Product Requirements.
  8. Applications:
    - a. Wall expansion and control joints.
    - b. Joints between door, window, and other frames and adjacent construction.
    - c. Joints between different exposed materials.
    - d. Openings below ledge angles in masonry.
- B. Type - General Purpose Interior Sealant - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
1. Color: To be selected by Architect from manufacturer's standard range.
  2. Grade: ASTM C834; Grade - NF.
  3. Products:
    - a. Franklin International, Inc; Titebond Painter's Plus Caulk: [www.titebond.com/#sle](http://www.titebond.com/#sle).
    - b. Franklin International, Inc; Titebond Painter's Caulk: [www.titebond.com/#sle](http://www.titebond.com/#sle).
    - c. Hilti, Inc; CP 506 Smoke and Acoustical Sealant: [www.us.hilti.com/#sle](http://www.us.hilti.com/#sle).
    - d. Hilti, Inc; CP 572 Smoke and Acoustical Spray Sealant: [www.us.hilti.com/#sle](http://www.us.hilti.com/#sle).
    - e. Hilti, Inc; Lightweight Smoke and Acoustic Sealant CS-S SA Light: [www.us.hilti.com/#sle](http://www.us.hilti.com/#sle).
    - f. Pecora Corporation; AC-20 +Silicone: [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - g. Sherwin-Williams Company; White Lightning 3006 Siliconized Acrylic Latex Caulk: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
    - h. Sherwin-Williams Company; 850A Acrylic Latex Caulk: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
    - i. Sherwin-Williams Company; 950A Siliconized Acrylic Latex Caulk: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).

- j. Sherwin-Williams Company; Bolt Quickdry Siliconized Acrylic Latex Caulk: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
  - k. Sherwin-Williams Company; Powerhouse Siliconized Acrylic Latex Sealant: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
  - l. Specified Technologies Inc; Smoke N' Sound Acoustical Sealant: [www.stifirestop.com/#sle](http://www.stifirestop.com/#sle).
  - m. Top Gun, a brand of PPG Architectural Coatings; Top Gun 200: [www.ppgpaints.com/#sle](http://www.ppgpaints.com/#sle).
  - n. Tremco Commercial Sealants & Waterproofing; Tremflex 834: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
  - o. Substitutions: See Section 01 60 00 - Product Requirements.
4. Applications:
- a. Interior wall and ceiling control joints in non-wet areas.
  - b. Joints between door, window, and other frames and adjacent construction.
  - c. Other interior joints for which no other type of sealant is indicated.
- C. Type - Moving Joint Sealant - Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, non-sag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.
- 1. Products:
    - a. Pecora Corporation; Pecora BA-98 Non-Skinning Butyl Sealant: [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - b. Tremco Commercial Sealants & Waterproofing; Acoustical/Curtainwall Sealant: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - c. Substitutions: See Section 01 60 00 - Product Requirements.
  - 2. Applications:
    - a. Lap Joints in Sheet Metal Fabrications
    - b. Lap Joints between Manufactured Metal Panels

## **2.04 ACCESSORIES**

- A. Sealant Backing Rod, Bi-Cellular Type:
  - 1. Cylindrical flexible sealant backings complying with ASTM C1330 Type B.
  - 2. Size: 25 to 50 percent larger in diameter than joint width.
  - 3. Products:
    - a. Adfast USA Inc; Adseal BR-2600 Backer Rod: [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).
    - b. Nomaco, Inc; SOF Rod: [www.nomaco.com/#sle](http://www.nomaco.com/#sle).
    - c. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, nonstaining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Noncorrosive and nonstaining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; nonstaining.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrates and joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

### **3.02 PREPARATION**

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



- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.

### **3.03 INSTALLATION**

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Measure joint dimensions and size joint backers to achieve the following, unless otherwise indicated:
  - 1. Width/depth ratio of 2:1.
  - 2. Neck dimension no greater than 1/3 of the joint width.
  - 3. Surface bond area on each side not less than 75 percent of joint width.
- D. Install bond breaker backing tape where backer rod cannot be used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- F. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- G. Do not seal the following types of joints.
  - 1. Intentional weepholes in masonry.
  - 2. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
  - 3. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
  - 4. Joints where installation of sealant is specified in another section.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

### **3.04 CLEANING**

- A. Clean adjacent soiled surfaces.

### **3.05 PROTECTION OF FINISHED WORK**

- A. Protect sealants until cured.

**END OF SECTION**



**SECTION 08 43 13**  
**ALUMINUM-FRAMED STOREFRONTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Aluminum-framed storefront, with vision glass.
  - 1. Thermally-broken exterior storefront (ALSF-1).
- B. Aluminum doors at exterior; and interior vestibule (**ALT 02**)
- C. Weatherstripping.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 92 00 - Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 08 71 00 - Door Hardware: Hardware items other than specified in this section.
- C. Section 08 80 00 - Glazing: Glass and glazing accessories.

**1.03 PRICE AND PAYMENT PROCEDURES**

- A. Alternates:
  - 1. See Section 01 23 00 - Alternates for product alternates affecting this section.
  - 2. This section includes base bid and alternate items.

**1.04 REFERENCE STANDARDS**

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum From Shop to Site.
- B. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document).
- C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
- D. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
- E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- F. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric).
- G. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- H. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.

**1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate with installation of other components that comprise the exterior enclosure.
- B. Preinstallation Meeting: Conduct a preinstallation meeting one week before starting work of this section; require attendance by all affected installers.

**1.06 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware,.
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
- D. Samples: Submit two samples 4 by 12 inches in size illustrating finished aluminum surface.

- E. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
- F. Specimen warranty.

#### **1.07 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least ten years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of experience and approved by manufacturer.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

#### **1.09 FIELD CONDITIONS**

- A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

#### **1.10 WARRANTY**

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Provide ten (10) year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.
- C. Provide the following manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.
  - 1. Natural (Clear) or Color Anodized: Ten (10)

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Provide Basis of Design manufacturer listed, or a standard or custom product from one of the other listed manufacturers with equivalent performance, material properties, features, general configuration, appearance, and warranty.
- B. Aluminum-Framed Storefronts:
  - 1. **BASIS OF DESIGN:** Kawneer North America; 451UT: [www.kawneer.com/#sle](http://www.kawneer.com/#sle).
  - 2. Oldcastle BuildingEnvelope: [www.oldcastlebe.com/#sle](http://www.oldcastlebe.com/#sle).
  - 3. Pittco Architectural Metals Inc: [www.pittcometals.com/#sle](http://www.pittcometals.com/#sle).
  - 4. Tubelite, Inc: [www.tubeliteinc.com/#sle](http://www.tubeliteinc.com/#sle).
  - 5. Wausau; [www.wausauwindow.com](http://www.wausauwindow.com).
  - 6. YKK AP America, Inc: [www.ykkap.com/commercial/#sle](http://www.ykkap.com/commercial/#sle).
  - 7. Substitutions: See Section 01 60 00 - Product Requirements.

#### **2.02 ALUMINUM-FRAMED STOREFRONT**

- A. Interior Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
  - 1. Fabrication Method: Shop/factory unitized system.
  - 2. Glazing Method: Either shop/factory or field glazed system.
  - 3. Glazing Rabbet for Exterior Glazing: For 1 inch insulating glazing.
  - 4. Glazing Position: Centered (front to back).
  - 5. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep.
  - 6. Finish: Class I color anodized
    - a. Factory finish all surfaces that will be exposed in completed assemblies.

- b. Coat concealed metal surfaces that will be in contact with cementitious materials or dissimilar metals with bituminous paint.
  - 7. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
  - 8. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
  - 9. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
  - 10. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
  - 11. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
  - 12. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
  - 13. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glazing and heel bead of glazing compound.
- B. Performance Requirements
- 1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
    - a. Design Wind Loads: Comply with requirements of structural notes/drawings.
    - b. Member Deflection: Limit member deflection to 1/175 in any direction, with full recovery of glazing materials.
  - 2. Water Penetration Resistance: No uncontrolled water on interior face, when tested in accordance with ASTM E331 at pressure differential of 10 psf.
  - 3. Air Leakage: Maximum of 0.06 cu ft/min sq ft of wall area, when tested in accordance with ASTM E283 at 6.24 psf pressure differential across assembly.
  - 4. Condensation Resistance Factor of Framing: 68 (frame), 68 (glass), minimum, measured in accordance with AAMA 1503.
  - 5. U-value Including Glazing (Glass to Exterior): 0.34 Btu/(hr sq ft deg F), or better.
    - a. Assumes glazing U-value of 0.28, per Section 088000.

### 2.03 COMPONENTS

- A. Aluminum Framing Members: Tubular aluminum sections.
  - 1. Framing members for interior and vestibule applications need not be thermally broken.
  - 2. Frame components shall be screw spline construction.
  - 3. Glazing Stops: Flush.
- B. Glazing: See Section 08 80 00.
- C. Swing Doors: Glazed aluminum.
  - 1. Thickness: 1-3/4 inches.
  - 2. Top and Vertical Stiles: Medium
  - 3. Bottom Rail: 10 inches wide.
  - 4. Glazing Stops: Square.
  - 5. Finish: to match adjacent storefront.

### 2.04 MATERIALS

- A. Extruded Aluminum: ASTM B221 (ASTM B221M); minimum wall thickness of .080" (2 mm).

- B. Fasteners: Stainless steel.
- C. Exposed Flashings: Aluminum sheet, 20 gauge, 0.032 inch minimum thickness; finish to match framing members.
  - 1. See Section 076200 for additional requirements.
- D. Concealed Flashings: Stainless steel, 26 gauge, 0.0187 inch minimum thickness.
  - 1. See Section 076200 for additional requirements.
- E. Sealant for Setting Thresholds: Non-curing butyl type.
- F. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- G. Glazing Accessories: See Section 08 80 00.

## **2.05 FINISHES**

- A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.
  - 1. Color: Black
- B. Touch-Up Materials: As recommended by coating manufacturer for field application.

## **2.06 HARDWARE**

- A. For each exterior door, include weatherstripping, sill sweep strip, and threshold.
  - 1. Other Door Hardware: As specified in Section 08 71 00.
  - 2. Weatherstripping: Wool pile, continuous and replaceable; provide on all doors.
  - 3. Sill Sweep Strips: Resilient seal type, retracting, of neoprene; provide on all doors.
  - 4. Threshold: Extruded aluminum, one piece per door opening, non-slip surface; provide on all doors.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify dimensions, tolerances, and method of attachment with other work.
- B. Verify that storefront wall openings and adjoining water-resistive and/or air barrier seal materials are ready to receive work of this section.

### **3.02 INSTALLATION**

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Install insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Set thresholds in bed of sealant and secure.
- J. Install glass in accordance with Section 08 80 00, using gasket glazing method.
- K. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

**3.03 TOLERANCES**

- A. Maximum Variation from Plumb: 0.06 inch per 3 feet non-cumulative or 0.06 inch per 10 feet, whichever is less.
- B. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

**3.04 ADJUSTING**

- A. Adjust operating hardware for smooth operation.

**3.05 CLEANING**

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

**3.06 PROTECTION**

- A. Protect installed products from damage until Date of Substantial Completion.

**END OF SECTION**





**SECTION 08 71 00**  
**DOOR HARDWARE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Removal, salvage and reinstallation of existing hardware.

**1.02 RELATED REQUIREMENTS**

- A. Section 02 41 00 - Demolition: Salvage of existing hardware.
- B. Section 07 92 00 - Joint Sealants: Sealants for setting exterior door thresholds.
- C. Section 08 43 13 - Aluminum-Framed Storefronts: Coordination.

**1.03 PRICE AND PAYMENT PROCEDURES**

- A. Alternates:
  - 1. See Section 01 23 00 - Alternates for product alternates affecting this section.
  - 2. This section includes alternate items.

**1.04 REFERENCE STANDARDS**

- A. ADA Standards - 2010 ADA Standards for Accessible Design.
- B. ICC A117.1 - Accessible and Usable Buildings and Facilities.

**1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate the manufacture, fabrication, and installation of products that door hardware is installed on.
- B. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.
- C. Furnish templates for door and frame preparation to manufacturers and fabricators of products requiring internal reinforcement for door hardware.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Remove salvageable materials; store and deliver to collection point or point of reuse.
- B. Label and identify each package with door opening code to match door hardware schedule.

**PART 2 PRODUCTS**

**2.01 DESIGN AND PERFORMANCE CRITERIA**

- A. Install door hardware products to comply with the following requirements:
  - 1. Applicable provisions of federal, state, and local codes.
  - 2. Accessibility: ADA Standards and ICC A117.1.
- B. Fasteners:
  - 1. Provide fasteners of proper type, size, quantity, and finish that comply with commercially recognized standards for proposed applications.
    - a. Aluminum fasteners are not permitted.
    - b. Provide phillips flat-head screws with heads finished to match door surface hardware unless otherwise indicated.
  - 2. Provide machine screws for attachment to reinforced hollow metal and aluminum frames.
    - a. Self-drilling (Tek) type screws are not permitted.
  - 3. Provide stainless steel machine screws and lead expansion shields for concrete and masonry substrates.
  - 4. Concealed Fasteners: Do not use through or sex bolt type fasteners on door panel sides indicated as concealed fastener locations, unless otherwise indicated.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

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

#### **3.02 INSTALLATION**

- A. Install hardware in accordance with manufacturer's instructions and applicable codes.
- B. Use templates provided by hardware item manufacturer.
- C. Door Hardware Mounting Heights: Distance from finished floor to center line of hardware item. As indicated in following list; unless noted otherwise in Door Hardware Schedule or on drawings.
  - 1. For Aluminum-Framed Storefront Doors and Frames: See Section 08 43 13.
  - 2. Mounting heights in compliance with ADA Standards:
    - a. Locksets: 40-5/16 inch.
    - b. Push Plates/Pull Bars: 42 inch.
    - c. Exit Devices: 40-5/16 inch.
- D. Set exterior door thresholds with full-width bead of elastomeric sealant at each point of contact with floor providing a continuous weather seal; anchor thresholds with stainless steel countersunk screws.
  - 1. See Section 07 92 00 for additional requirements.

#### **3.03 ADJUSTING**

- A. Adjust work under provisions of Section 01 70 00 - Execution and Closeout Requirements.
- B. Adjust hardware for smooth operation.
- C. Adjust gasketing for complete, continuous seal; replace if unable to make complete seal.

#### **3.04 CLEANING**

- A. Clean finished hardware in accordance with manufacturer's written instructions after final adjustments have been made.
- B. Clean adjacent surfaces soiled by hardware installation.

#### **3.05 PROTECTION**

- A. Protect finished Work under provisions of Section 01 70 00 - Execution and Closeout Requirements.
- B. Do not permit adjacent work to damage hardware or finish.

**END OF SECTION**

## SECTION 08 80 00

### GLAZING

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Insulating glass units, for exterior glazing (IGU-1, IGU-1T).
- B. Glazing compounds and accessories.

##### 1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 - Joint Sealants: Sealants for other than glazing purposes.
- B. Section 08 43 13 - Aluminum-Framed Storefronts: Storefront assemblies requiring glazing.

##### 1.03 REFERENCE STANDARDS

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.
- C. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
- D. ASTM C1036 - Standard Specification for Flat Glass.
- E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass.
- F. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- G. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.
- H. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.
- I. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
- J. GANA (GM) - GANA Glazing Manual.
- K. GANA (SM) - GANA Sealant Manual.
- L. NFRC 100 - Procedure for Determining Fenestration Product U-factors.
- M. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
- N. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.

##### 1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data on Insulating Glass Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

##### 1.05 QUALITY ASSURANCE

- A. Perform Work in accordance with GANA (GM) and FGMA Sealant Manual for glazing installation methods.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.
- C. Installer Qualifications: Company approved by manufacturer.

### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect glazing according to manufacturer's written instructions and as needed to prevent damage to glazing from moisture, condensation, temperature changes, direct exposure to sun, or other causes.
- B. Comply with glazing manufacturer's written instructions for shipping, storing, and handling glazing as needed to prevent deterioration of coatings, damage to edges, and abrasion of glass surfaces and applied coatings. Store indoors.

### 1.07 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.
- C. Store products in manufacturer's unopened packaging until ready for installation.

### 1.08 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Insulating Glass Units: Provide a ten (10) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including replacement of failed units.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Float Glass Manufacturers:
  - 1. AGC Glass North America, Inc: [www.agc-yourglass.com/#sle](http://www.agc-yourglass.com/#sle).
  - 2. Cardinal Glass Industries: [www.cardinalcorp.com](http://www.cardinalcorp.com).
  - 3. Guardian Glass, LLC: [www.guardianglass.com](http://www.guardianglass.com).
  - 4. Pilkington North America Inc: [www.pilkington.com/na/#sle](http://www.pilkington.com/na/#sle).
  - 5. **BASIS OF DESIGN:** Vitro Architectural Glass (formerly PPG Glass): [www.vitroglazings.com/#sle](http://www.vitroglazings.com/#sle).
  - 6. Substitutions: See Section 01 60 00 - Product Requirements.

### 2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
  - 1. Design Pressure: as indicated in Structural drawings.
  - 2. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
  - 3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
  - 4. Glass thicknesses listed are minimum.
- B. Weather-Resistive Barrier Seals: Provide completed assemblies that maintain continuity of building enclosure water-resistive barrier, vapor retarder, and/or air barrier.
  - 1. In conjunction with weather barrier related materials described in other sections, as follows:
    - a. Flexible Flashings: See Section 07 27 13.
  - 2. To utilize inner pane of multiple pane insulating glass units for continuity of vapor retarder and/or air barrier seal.
  - 3. To maintain a continuous vapor retarder and/or air barrier throughout glazed assembly from glass pane to heel bead of glazing sealant.
- C. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's published data as determined with the following procedures and/or test methods:
  - 1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.

2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

### 2.03 GLASS MATERIALS

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

### 2.04 INSULATING GLASS UNITS

- A. Manufacturers:
  1. Glass: Any of the manufacturers specified for float glass.
  2. Cardinal Glass Industries: [www.cardinalcorp.com](http://www.cardinalcorp.com).
  3. Guardian Industries Corp: [www.sunguardglass.com](http://www.sunguardglass.com).
  4. Oldcastle Glass; [www.oldcastleglass.com](http://www.oldcastleglass.com).
  5. Pilkington North America Inc: [www.pilkington.com/na](http://www.pilkington.com/na).
  6. Viracon, Apogee Enterprises, Inc: [www.viracon.com](http://www.viracon.com).
  7. **BASIS OF DESIGN (FOR IG UNITS):** Vitro (formerly PPG Industries, Inc); Solarban 72 (2) Acuity + Acuity: [www.ppgideascales.com](http://www.ppgideascales.com).
  8. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Insulating Glass Units: Types as indicated.
  1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
  2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
  3. Warm-Edge Spacers, where indicated below: Flexible silicone with polyisobutylene (PIB) primary seal warm-edge technology design.
    - a. Spacer Width: As required for specified insulating glass unit.
    - b. Spacer Height: Manufacturer's standard.
    - c. Products:
      - 1) Quanex IG Systems, Inc; Super Spacer TriSeal: [www.quanex.com/#sle](http://www.quanex.com/#sle).
      - 2) Viracon Thermal Spacer (VTS).
      - 3) Substitutions: See Section 01 60 00 - Product Requirements.
  4. Spacer Color: Black.
  5. Edge Seal:
    - a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone sealant as secondary seal applied around perimeter.
  6. Color: Black.
  7. Purge interpane space with dry air, hermetically sealed.
- C. Type IGU-1 - Insulating Glass Units: Vision glass, double glazed.
  1. Space between lites filled with air.
  2. Outboard Lite: Heat-strengthened float glass, 1/4 inch thick, minimum.
    - a. Tint: Clear.
    - b. Coating: Low-E (passive type), on #2 surface.
  3. Metal edge spacer.
  4. Inboard Lite: Heat-strengthened float glass, 1/4 inch thick, minimum.
    - a. Tint: Clear

5. Total Thickness: 1 inch.
  6. Thermal Transmittance (U-Value), Winter - Center of Glass: 0.28, maximum.
  7. Visible Light Transmittance (VLT): 67 percent, minimum.
  8. Solar Heat Gain Coefficient (SHGC): 28 percent, maximum.
  9. Visible Light Reflectance, Outside: 13 percent, maximum.
  10. Glazing Method: Dry glazing method, gasket glazing.
  11. **BASIS OF DESIGN** Product: Solarban 72 Acuity + Acuity
- D. Type (IGU-IT) - Insulating Glass Units: Safety glazing.
1. Applications:
    - a. Glazed lites in exterior doors.
    - b. Glazed sidelights and panels next to doors.
    - c. Other locations required by applicable federal, state, and local codes and regulations.
    - d. Other locations indicated on drawings.
  2. Glass Type: Same as Type IGU-1 except use fully tempered float glass for both outboard and inboard lites.

## 2.05 ACCESSORIES

- A. Setting Blocks: Neoprene, with 80 to 90 Shore A durometer hardness; ASTM C864 Option I. Length of 0.1 inch for each square foot of glazing or minimum 4 inch x width of glazing rabbet space minus 1/16 inch x height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option I. Minimum 3 inch long x one half the height of the glazing stop x thickness to suit application, self adhesive on one face.
- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.
  1. Width: 1/2 inch.
  2. Thickness: As required for application.
- D. Glazing Gaskets: Resilient silicone extruded shape to suit glazing channel retaining slot; ASTM C864 Option I; color black.

## PART 3 EXECUTION

### 3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that the minimum required face and edge clearances are being provided.
- C. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.
- D. Verify that sealing between joints of glass framing members has been completed effectively.
- E. Proceed with glazing system installation only after unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

- A. Clean contact surfaces with appropriate solvent and wipe dry immediately before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

### **3.03 INSTALLATION, GENERAL**

- A. Install glazing in compliance with written instructions of glass, gaskets, and other glazing material manufacturers, unless more stringent requirements are indicated, including those in glazing referenced standards.
- B. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.
- C. Do not exceed edge pressures around perimeter of glass lites as stipulated by glass manufacturer.
- D. Set glass lites of system with uniform pattern, draw, bow, and similar characteristics.
- E. Set glass lites in proper orientation so that coatings face exterior or interior as indicated.
- F. Prevent glass from contact with any contaminating substances that may be the result of construction operations such as, and not limited to the following; weld splatter, fire-safing, plastering, mortar droppings, and paint.

### **3.04 INSTALLATION - EXTERIOR DRY GLAZING METHOD (GASKET GLAZING)**

- A. Application - Exterior and/or Interior Glazed: Set glazing infills from either the exterior or the interior of the building.
- B. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- C. Rest glazing on setting blocks and push against fixed stop with sufficient pressure on gasket to attain full contact.
- D. Install removable stops without displacing glazing gasket; exert pressure for full continuous contact.

### **3.05 CLEANING**

- A. See Section 01 74 19 - Construction Waste Management and Disposal, for additional requirements.
- B. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- C. Remove nonpermanent labels immediately after glazing installation is complete.
- D. Clean glass and adjacent surfaces after sealants are fully cured.
- E. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

### **3.06 PROTECTION**

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

**END OF SECTION**





**SECTION 09 21 16**  
**GYPSUM BOARD ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Performance criteria for gypsum board assemblies.
- B. Gypsum wallboard.
- C. Joint treatment and accessories.
- D. Painting of above-ceiling firewall warning signs required by code.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 50 00 - Construction Facilities and Temporary Controls: temporary partition requirements.
- B. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions.
- C. Section 06 10 00 - Rough Carpentry: Wood blocking product and execution requirements.
- D. Section 07 92 00 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

**1.03 REFERENCE STANDARDS**

- A. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
- B. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
- C. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.
- D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.
- E. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base.
- F. ASTM C1396/C1396M - Standard Specification for Gypsum Board.
- G. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
- H. GA-216 - Application and Finishing of Gypsum Board.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination: Coordinate the installation of gypsum board assemblies with size, location, and installation of service utilities.
- B. Sequencing: Install service utilities in an orderly and expeditious manner.

**1.05 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data:
  - 1. Provide data on gypsum board, accessories, and joint finishing system.
  - 2. Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

**1.06 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.
- B. Perform in accordance with ASTM C 840.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. See Section 01 74 19 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.
- C. Store metal products to prevent corrosion.

## **PART 2 PRODUCTS**

### **2.01 GYPSUM BOARD ASSEMBLIES**

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
  - 1. See PART 3 for finishing requirements.

### **2.02 BOARD MATERIALS**

- A. Manufacturers - Gypsum-Based Board:
  - 1. American Gypsum Company: [www.americangypsum.com](http://www.americangypsum.com).
  - 2. CertainTeed Corporation: [www.certainteed.com](http://www.certainteed.com).
  - 3. Georgia-Pacific Gypsum: [www.gpgypsum.com](http://www.gpgypsum.com).
  - 4. National Gypsum Company: [www.nationalgypsum.com](http://www.nationalgypsum.com).
  - 5. USG Corporation: [www.usg.com](http://www.usg.com).
  - 6. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  - 1. Application: Use for vertical surfaces, unless otherwise indicated.
  - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
    - a. Mold resistant board is required exterior wall assemblies.
  - 3. Thickness:
    - a. Vertical Surfaces: 5/8 inch.
    - b. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
  - 4. Mold-Resistant, Paper-Faced Products:
    - a. American Gypsum Company; M-Bloc: [www.americangypsum.com/#sle](http://www.americangypsum.com/#sle).
    - b. American Gypsum Company; M-Bloc Type X: [www.americangypsum.com/#sle](http://www.americangypsum.com/#sle).
    - c. American Gypsum Company; M-Bloc Type C: [www.americangypsum.com/#sle](http://www.americangypsum.com/#sle).
    - d. CertainTeed Corporation; M2Tech 5/8" Type X Moisture & Mold Resistant Drywall: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
    - e. Georgia-Pacific Gypsum; ToughRock Mold-Guard: [www.gpgypsum.com/#sle](http://www.gpgypsum.com/#sle).
    - f. Georgia-Pacific Gypsum; ToughRock Fireguard X Mold-Guard: [www.gpgypsum.com/#sle](http://www.gpgypsum.com/#sle).
    - g. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond XP Gypsum Board: [www.goldbondbuilding.com/#sle](http://www.goldbondbuilding.com/#sle).
    - h. Gold Bond Building Products, LLC provided by National Gypsum Company; Gold Bond XP Fire-Shield Gypsum Board: [www.goldbondbuilding.com/#sle](http://www.goldbondbuilding.com/#sle).
    - i. USG Corporation; Sheetrock Brand EcoSmart Panels Mold Tough Firecode X 5/8 in. (15.9 mm): [www.usg.com/#sle](http://www.usg.com/#sle).
    - j. USG Corporation; Sheetrock Brand Mold Tough Firecode SCX Panels 5/8 in. (15.9 mm): [www.usg.com/#sle](http://www.usg.com/#sle).
    - k. Substitutions: See Section 01 60 00 - Product Requirements.

### **2.03 GYPSUM BOARD ACCESSORIES**

- A. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
  - 1. Types: As detailed or required for finished appearance.

2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
3. Products:
  - a. Same manufacturer as framing materials.
  - b. Phillips Manufacturing Co: [www.phillipsmfg.com/#sle](http://www.phillipsmfg.com/#sle).
  - c. Trim-tex, Inc: [www.trim-tex.com/#sle](http://www.trim-tex.com/#sle).
  - d. Substitutions: See Section 01 60 00 - Product Requirements.
- B. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
  1. Fiberglass Tape: 2 inch wide, coated glass fiber tape for joints and corners at glass-faced gypsum or cement board.
  2. Paper Tape: 2 inch wide, creased paper tape for joints and corners at paper-faced gypsum.
  3. Joint Compound: Drying type, vinyl-based, ready-mixed.
  4. Joint Compound: Setting type, field-mixed.
- C. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- D. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that project conditions are appropriate for work of this section to commence.
- B. Verify that rough-in utilities are in proper location.

#### **3.02 BOARD INSTALLATION**

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
- C. Installation on Metal Framing: Use screws for attachment of gypsum board.

#### **3.03 INSTALLATION OF TRIM AND ACCESSORIES**

- A. Corner Beads: Install at external corners, using longest practical lengths.
- B. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

#### **3.04 JOINT TREATMENT**

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  1. Level 4: Walls and ceilings to receive other paint finishes, unless otherwise indicated.
  2. Level 0: Temporary partitions.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  1. Feather coats of joint compound so that camber is maximum 1/32 inch.
  2. Taping, filling, and sanding are not required at base layer of double-layer applications.
- D. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

**3.05 TOLERANCES**

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

**3.06 PROTECTION**

- A. Protect installed gypsum board assemblies from subsequent construction operations.

**END OF SECTION**

**SECTION 09 91 23**  
**INTERIOR PAINTING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Field application of paints (PT-##).
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
  - 1. Wood.
  - 2. Gypsum board.

**1.02 RELATED REQUIREMENTS:**

- A. Section 01 61 16 - Volatile Organic Compound (VOC) Content Restrictions.

**1.03 DEFINITIONS**

- A. MPI Gloss Level 1 (Flat or Matte): Not more than five units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. MPI Gloss Level 3 (Eggshell): 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.
- C. MPI Gloss Level 5 (Semi-Gloss): 35 to 70 units at 60 degrees, according to ASTM D 523.

**1.04 ACTION SUBMITTALS**

- A. Product Data
  - 1. For each type of product, include the following:
    - a. Preparation requirements and application instructions.
    - b. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
    - c. Product list cross-referenced to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
  - 2. For all paints and coatings, provide manufacturer's documentation indicating compliance with the following requirements as detailed in Part 2:
    - a. General Emissions Evaluation
    - b. VOC Content Requirements for Wet Applied Products.
    - c. Paint Content Restrictions.
- B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
  - 1. Submit Samples on rigid backing, 8 inches (200 mm) square.
  - 2. Apply coats on Samples in steps to show each coat required for system.
  - 3. Label each coat of each Sample.
  - 4. Label each Sample for location and application area.

**1.05 INFORMATIONAL SUBMITTALS**

- A. Material Ingredients Disclosure Documentation demonstrating the chemical inventory of the product to at least 0.1% (1,000 ppm) with all content characterized and screened.
  - 1. For each product, provide one of the following documents:
    - a. Health Product Declaration (HPD)
    - b. Declare Label

**1.06 MAINTENANCE MATERIAL SUBMITTALS**

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

#### **1.07 QUALITY ASSURANCE**

- A. MPI Standards:
  1. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.
- B. Mockups: Apply 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. Architect will select one surface to represent surfaces and conditions for application of each paint system.
    - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
    - b. Other Items: Architect will designate items or areas required.
  2. Final approval of color selections will be based on mockups.
    - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
  3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
  4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

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

#### **1.09 FIELD CONDITIONS**

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

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Benjamin Moore & Co.
- B. PPG Architectural Finishes, Inc.
- C. Sherwin-Williams Company (The).
- D. Substitutions: See Section 01 60 00 - Product Requirements.

#### **2.02 PAINT, GENERAL**

- A. MPI Standards:
  1. Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
  2. All paints and coatings to meet MPI X-Green Performance Standards except where otherwise indicated.
- 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. General Emissions Evaluation: Products must be compliant with the California Department of Public Health (CDPH) Standard Method v1.1–2010 or later version.
1. Compliance to be confirmed with one of the following certifications:
    - a. UL GreenGuard Gold.
    - b. SCS Indoor Advantage Gold.
    - c. Master Painters Institute (MPI) Extreme Green (X-Green).
    - d. Green Wise Gold.
    - e. Compliance with CHPS (Collaborative for High Performance Schools).
- D. VOC Content Requirements for Wet Applied Products:
1. All paints and coatings wet-applied on site must meet the applicable VOC limits of the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective February 5, 2016, except as follows:
    - a. All interior paints and coatings, including colorants and tints, shall not exceed the limits defined below, measured in grams per liter (g/L) less water and less exempt compounds:
      - 1) Flat: 10
      - 2) Non-Flat: 10
      - 3) Primers: 10, except as allowed by specified MPI Number.
      - 4) Colorants do not increase the VOC content of the base paint when tinted.
- E. Paint Content Restrictions
1. All interior paints and coatings must be free of alkylphenol ethoxylates (APEs).
    - a. This means paint products do not contain intentionally added or unintentionally added/residual APEs (above 100 ppm)
  2. All paints and coatings must be free of antimicrobial products.
    - a. Antimicrobials added to materials or products for the sole purpose of preserving the product are exempt from this restriction.
  3. Compliance with above restrictions to be confirmed with one of the following documents:
    - a. Green Seal Paint Standard GS-11 Certification, Green Seal, Inc.
    - b. Material Ingredients Disclosure Documentation indicating product is Red List Free.
    - c. Manufacturer’s signed letter of confirmation.
- F. Provide products with Material Ingredients Disclosure Documentation demonstrating the chemical inventory of the product to at least 0.1% (1,000 ppm), with all content characterized and screened, to be verified through the HPD or Declare Label.
- G. Colors: As indicated in Color Schedule.

**2.03 SOURCE QUALITY CONTROL**

- A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:
1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
  2. Testing agency will perform tests for compliance with product requirements.
  3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

## **2.04 PRIMERS/SEALERS**

- A. Interior Latex Primer/Sealer: MPI #149 X-Green.
  - 1. VOC Content: E Range of E3 (<11g/L).
  - 2. Environmental Performance Rating: EPR 3.

## **2.05 WOOD PRIMERS**

- A. Interior Latex-Based Wood Primer: MPI #137 X-Green.
  - 1. VOC Content: E Range of E3 (<51g/L).
  - 2. Environmental Performance Rating: EPR 3.

## **2.06 WATER-BASED PAINTS**

- A. Flat (MPI Gloss Level 1) MPI #143 X-Green
  - 1. VOC Content: E Range of E3 (<11g/L).
  - 2. Environmental Performance Rating: EPR 4.
- B. Eggshell (MPI Gloss Level 3) MPI #145 X-Green
  - 1. VOC Content: E Range of E3 (<11g/L).
  - 2. Environmental Performance Rating: EPR 4.5.
- C. Semi-gloss (MPI Gloss Level 5), MPI #147 X-Green
  - 1. VOC Content: E Range of E3 (<11g/L).
  - 2. Environmental Performance Rating: EPR 5.5.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
  - 1. Wood: 15 percent.
  - 2. Gypsum Board: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.
- E. Proceed with coating application only after unsatisfactory conditions have been corrected.
  - 1. Application of coating indicates acceptance of surfaces and conditions.

### **3.02 PREPARATION**

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
  - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
  - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Wood Substrates:
  - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.



2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

### **3.03 APPLICATION**

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
  1. Use applicators and techniques suited for paint and substrate indicated.
  2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
  3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
  4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
  5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

### **3.04 FIELD QUALITY CONTROL**

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
  1. Contractor shall touch up and restore painted surfaces damaged by testing.
  2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

### **3.05 CLEANING AND PROTECTION**

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

### **3.06 INTERIOR PAINTING SCHEDULE**

- A. Wood Substrates:
  1. Institutional Low-Odor/VOC Latex System MPI INT 6.3V:
    - a. Prime Coat: Primer, latex, for interior wood, MPI #137 X-Green.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.

- c. [Topcoat: Latex, interior, institutional low odor/VOC, semi-gloss (MPI Gloss Level 5), MPI #147 X-Green.]
- B. Gypsum Board and Plaster Substrates:
  - 1. Institutional Low-Odor/VOC Latex System MPI INT 9.2M:
    - a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149 X-Green.
    - b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    - c. Topcoat: Latex, interior, institutional low odor/VOC, eggshell (MPI Gloss Level 3), MPI #145 X-Green.

**END OF SECTION**

**SECTION 12 36 13**  
**SOLID SURFACE WINDOW SILLS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Special solid surface components, including:
  - 1. Window sills.

**1.02 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition.
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards.
- D. ISFA 2-01 - Classification and Standards for Solid Surfacing Material.
- E. NEMA LD 3 - High-Pressure Decorative Laminates.
- F. PS 1 - Structural Plywood.

**1.03 SUBMITTALS**

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Specimen warranty.
- C. Shop Drawings: Complete details of materials and installation, for concrete countertop.
- D. Verification Samples: For each finish product specified, minimum size 6 inches square, representing actual product, color, and patterns.
- E. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

**1.04 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of experience and approved by manufacturer.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

**1.06 FIELD CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

**PART 2 PRODUCTS**

**2.01 WINDOW SILLS**

- A. Solid Surfacing: Solid surfacing sheet or plastic resin casting over continuous substrate.
  - 1. Flat Sheet Thickness: 1/2 inch, overall thickness as detailed
  - 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
    - a. Manufacturers:
      - 1) Avonite Surfaces: [www.avonitesurfaces.com](http://www.avonitesurfaces.com).

- 2) Dupont; Corian: [www.corian.com](http://www.corian.com).
  - 3) Formica Corporation: [www.formica.com](http://www.formica.com).
  - 4) **BASIS OF DESIGN:** Wilsonart: [www.wilsonart.com](http://www.wilsonart.com).
  - 5) Substitutions: See Section 01 60 00 - Product Requirements.
- b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
  - c. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
  - d. Color and Pattern: as indicated in Material ID.
3. Exposed Edge Treatment: Eased, unless otherwise indicated
  4. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Premium Grade.

## **2.02 MATERIALS**

- A. Wood-Based Components:
  1. Wood fabricated from old growth timber is not permitted.
- B. Plywood for Supporting Substrate: PS 1 Exterior Grade, A-C veneer grade, minimum 5-ply; minimum 3/4 inch thick; join lengths using metal splines.
- C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- D. Joint Sealant: Mildew-resistant silicone sealant, clear.

## **2.03 FABRICATION**

- A. Solid Surfacing: Fabricate tops up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

### **3.02 PREPARATION**

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

### **3.03 INSTALLATION**

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.
- B. Securely attach window sills to substrate using adhesive. Make flat surfaces level; shim where required.
- C. Seal joint between back/end splashes and vertical surfaces.

### **3.04 TOLERANCES**

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.

### **3.05 CLEANING**

- A. Clean countertops surfaces thoroughly.

**3.06 PROTECTION**

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

**END OF SECTION**

