PROJECT MANUAL

Menominee County ISD
Central Elementary Interior Renovation

Menominee, MI 49858

U.P. ENGINEERS & ARCHITECTS, INC.
1701 DUNLAP AVENUE, SUITE B
MARINETTE, WI 54143

UPEA Project No. M385-04227 (IR)

April 25, 2025

DOCUMENT 00 01 10

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DIVISION 09 - FINISHES

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ADVERTISEMENT FOR BIDS

Project:	Central Elementary Interior Renovation 1800 18th Avenue, Menominee, MI 49858
Owner:	Menominee County ISD 1201 41st Avenue, Menominee, MI 49858, 906-863-5665
Architect/Engineer:	U.P. Engineers & Architects, Inc. 1701 Dunlap Avenue, Suite B, Marinette, WI 54143, 715-732-4188
Date:	April 25, 2025

Bids will be accepted under seal for the construction and renovation of the Central Elementary School.

Bids will be received at the office of the Architect/Engineer at address above or by email at bmarklein@upea.com, until 1:00 PM local time on May 16, 2025, at which time and place the Bids will be officially opened and read aloud. Bids not received by the indicated time will not be opened.

Project Description: Renovation of (8) existing classrooms and (1) office to better suit current educational and administrative needs. Interior renovations include removal and replacement of casework, cabinets, countertops, floor/wall coverings, plumbing fixtures, windows, and interior and exterior doors.

An Optional Pre-bid Meeting will be held for Bidders at 10:00 AM local time on May 2, 2025, at the project location, 1800 18th Avenue, Menominee, MI 49858.

Bid Documents for the Project may be obtained by contacting U.P. Engineers & Architects, Inc., information listed above. Documents are available in either paper form or as PDF documents, with a non-refundable fee as follows: Paper: $50 PDF: $0

Documents will also be available for viewing at the office of the Architect/Engineer and at the following Builders Exchanges: Builders Exchange of Michigan, Builders Exchange of Wisconsin, Iron Mountain-Kingsford Builders Exchange, Delta Chamber of Commerce.

Bidders are required to provide a Bid Bond according to the requirements in Section 00 21 13 - Instructions to Bidders. Bidders are required to submit qualifications to the approval of the Architect and Owner with their bid.

Submit your Bid on the Bid Form provided. Bidders are required to complete Bid Form 00 41 13. Refer to other Bidding requirements described in Section 00 21 13.

Your Bid will be required to be submitted under a condition of irrevocability for a period of 30 days after submission.

Owner reserves the right to waive irregularities and to accept or reject any or all Bids.

Steve Martin, Superintendent

END OF SECTION

SECTION 00 31 00

AVAILABLE PROJECT INFORMATION

1.1 SUMMARY

A. Available Project information has been furnished by Owner to Architect for use in designing this Project.

1. Each Bidder shall be fully familiar with available Project information, which has been prepared for Owner by separate consultants.
2. Available Project information is offered solely for reference and shall not be considered part of Contract Documents.
3. Data contained in Documents prepared by Owner's separate consultants is believed to be reliable; however, Owner and Architect do not guarantee their accuracy or completeness.
4. In preparing their Bids, Bidders shall consider and evaluate data contained in available Project information as well as Contract Documents prepared by Architect.

B. Related Documents:

1. Document 00 21 13 - Instructions to Bidders: Site examination.

END OF DOCUMENT

SECTION 00 41 13

BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

1.1 BID INFORMATION

A. To: Menominee County ISD

B. Project Title: Central Elementary Interior Renovation

C. Date: .....

D. Submitted by: .....

E. Company Name and Address: .....

1.2 OFFER

A. Having examined the Place of the Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by the Architect for the above-referenced Project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Prices of:

Base Bid – Central Elementary Interior Renovation .....
in lawful money of the United States of America.

B. We have included the Bid security as required by the Instructions to Bidders.

C. All applicable federal taxes are included and State of Michigan and City of Menominee taxes are included in the Prices.

1.3 ACCEPTANCE

A. This offer shall be open to acceptance and is irrevocable for 15 days from the Bid closing date.

B. If this Bid is accepted by the Owner within the time period stated above, we will:
1. Furnish the required bonds within seven days of receipt of Notice of intent to Award.

C. If this Bid is accepted within the indicated time, and we fail to commence the Work or we fail to provide the required bonds, the Bid security shall be forfeited as damages to the Owner by reason of our failure, limited in amount to the lesser of the face value of the Bid security or the difference between this Bid and the Bid upon which Contract is signed.

D. In the event our Bid is not accepted within the time stated above, the required Bid security will be returned to the undersigned, according to the provisions of the Instructions to Bidders, unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.4 CONTRACT TIME

A. If this Bid is accepted, we will:
   1. Be substantially complete with work needed for owner occupancy by the 15th day of August 2025.
   2. Complete the Work by the 20th day of August 2025.

1.5 CHANGES TO THE WORK

A. When the Architect establishes that the method of valuation for changes in the Work will be net cost plus a percentage fee according to General Conditions, our percentage fee shall be 15 percent overhead and profit on the net cost of our own Work, and 10 percent on the gross cost of Work performed by any Subcontractor.

B. On Work deleted from the Contract, our credit to the Owner shall be the Architect-approved net cost plus 50 percent of the overhead and profit percentage noted above.

1.6 ADDENDA

A. Following Addenda have been received, and the modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Price.

   1. Addendum #
   2. Addendum #

1.7 APPENDICES

A. Following documents are attached to and made a condition of the Bid:

   1. Bid security.
   2. Bidder's qualifications statement and supporting data.

1.8 SUBCONTRACTORS

A. Provide the name of any Subcontractors planned for plumbing or door/window work:

   1. .....

   2. .....

1.9 BID FORM SIGNATURES

A. The Corporate Seal of ..... was hereunto affixed in the presence of:

   1. .....

B. If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above.

END OF DOCUMENT

SUBSTITUTION REQUEST FORM

To: Menominee County ISD

Project Title: Central Elementary Interior Renovation

From:

Section No.	Drawing Reference	Specified Product	Proposed Substitution

Does the substitution affect dimensions shown on drawings?	Yes	No
Does the substitution affect other trades?	Yes	No
Does the substitution affect the appearance?	Yes	No
Does the substitution differ in the options available from that specified?	Yes	No
Does the manufacturer's guarantee differ from that specified?	Yes	No

If you indicated "Yes" to any of the items above, or if there are any other differences, attach a thorough explanation on company letterhead. If differences are not noted and acknowledged in writing by Architect, product must equal the specification requirements.

The proposed substitution was used within the last 24 months on the following project without failure:

Project Name_____

Location_____

Architect_____ Telephone_____

Owner_____ Telephone_____

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

Submitted By:

Firm Name:

Address:

Phone:

Email:

For Architect/Engineer

- ☐ Accepted
- ☐ Accepted as Noted
- ☐ Rejected: not enough information
- ☐ Rejected: does not meet specifications
- ☐ Rejected: not received on time

By_____

Date_____

Remarks_____

AFFIDAVIT OF BIDDER

The undersigned, the owner or authorized officer of _____ (the "Bidder"), pursuant to the familial disclosure requirement provided in the Menominee County ISD (the "District") advertisement for construction bids, hereby represent and warrant, except as provided below, that no familial relationships exist between the owner(s) or any employee of District and any member of the Board of Education of the School District or the Superintendent of the School District.

List any Familial Relationships:

BIDDER:

_____

By: _____

Its: _____

STATE OF)

)ss.

COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, 20___, by _____.

_____

, Notary Public

_____ County, _____

My Commission Expires: _____

Acting in the County of: _____

AFFIDAVIT OF COMPLIANCE – IRAN ECONOMIC SANCTIONS ACT

MICHIGAN PUBLIC ACT NO. 517 OF 2012

The undersigned, the owner or authorized officer of _____ (the "Bidder"), pursuant to the compliance certification requirement provided in the Menominee County ISD (the "District") Advertisement for Bids, hereby certifies, represents and warrants that the Bidder (including its officers, directors and employees) is not an "Iran Linked Business" within the meaning of the Iran Economic Sanctions Act, Michigan Public Act No. 517 of 2012 (the "Act"), and that in the event Bidder is awarded a Contract as a result of the aforementioned Advertisement for Bids, the Bidder will not become an "Iran Linked Business" at any time during the course of performing under the Contract.

The Bidder further acknowledges that any person who is found to have submitted a false certification is responsible for a civil penalty of not more than $250,000.00 or 2 times the amount of the Contract or proposed Contract for which the false certification was made, whichever is greater, the cost of the School District's investigation, and reasonable attorney fees, in addition to the fine. Moreover, any person who submitted a false certification shall be ineligible to bid on an Advertisement for Bids for three (3) years from the date that it is determined that the person has submitted the false certification.

BIDDER:

_____
Name of Bidder

By: _____

Its: _____

STATE OF _____)

)ss.

COUNTY OF _____)

This instrument was acknowledged before me on the _____ day of _____, 20____, by _____.

_____

_____ , Notary Public

_____County, _____

My Commission Expires: _____

Acting in the County of: _____

SECTION 00 43 00

PROCUREMENT FORM SUPPLEMENTS

1.1 PROJECT INFORMATION

A. To: Menominee County ISD

B. Project Name: Central Elementary Interior Renovation

C. Date: .....

D. Submitted by: .....

E. According to Document 00 21 13 - Instructions to Bidders - AIA and Document 00 41 13- Bid Form - Stipulated Sum (Single-Prime Contract), we include the Appendices to Bid Form Supplements listed below.

1. The information provided shall be considered an integral part of the Bid Form.

1.2 BID FORM SUPPLEMENT SIGNATURES

A. The Corporate Seal of.....

B. (Bidder - print the full name of your firm) was hereunto affixed in the presence of .....

C. (Authorized signing officer and title)

D. (Seal) .....

E. (Authorized signing officer and title):

F. (Seal) .....

1.3 APPENDIX A - LIST OF SUBCONTRACTORS

A. The list of Subcontractors attached is an integral part of the Bid Form and is referenced in the Bid submitted by:

1. (Bidder) .....
2. To Menominee County ISD
3. Dated .....

1.4 APPENDIX B - LIST OF UNIT PRICES

A. The list of Unit Prices attached is an integral part of the Bid Form and is referenced in the Bid submitted by:

1. (Bidder) .....
2. To Menominee County ISD
3. Dated .....

END OF DOCUMENT

SECTION 00 52 13

AGREEMENT FORM - STIPULATED SUM

1.1 SUMMARY

A. Document Includes:

1. Agreement.

B. Related Documents:

1. Document 00 72 13 - General Conditions - Stipulated Sum.

1.2 AGREEMENT

A. Basis of Agreement between Owner and Contractor: AIA A101 - Standard Form of Agreement between Owner and Contractor where the basis of payment is a Stipulated Sum.

END OF DOCUMENT

SECTION 00 72 13

GENERAL CONDITIONS - STIPULATED SUM

1.1 SUMMARY

A. Document Includes:

1. General Conditions.

B. Related Documents:

1. Document 00 52 13 - Agreement Form - Stipulated Sum.

1.2 GENERAL CONDITIONS

A. General Conditions of the Contract: AIA A201 - General Conditions of the Contract.

END OF DOCUMENT

SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Contract description.
3. Contractor's use of Site and premises.
4. Work sequence.
5. Work restrictions.
6. Owner occupancy.
7. Permits.
8. Specification conventions.

B. Related Requirements:

1. Section 01 20 00 - Price and Payment Procedures.
2. Section 01 32 16 - Construction Progress Schedule: Digital project management procedures and web-based project management software package.
3. Section 01 50 00 - Temporary Facilities and Controls: Limitations and procedures governing temporary use of Owner's facilities.
4. Section 01 70 00 - Execution and Closeout Requirements.

1.2 PROJECT INFORMATION

A. Name: Central Elementary Interior Renovation.

1. Project Location: 1800 18th Avenue, Menominee, MI 49858

B. Owner: Menominee County ISD.

1. Owner's Representative: Steve Martin, Superintendent.

C. Project Architect/Engineer: U. P. Engineers & Architects, Inc.

1. Engineer’s Representative: Bill Marklein, Project Manager.

D. Web-Based Project Software: Project software will be used for purposes of managing communication and documents during the construction stage.

1. See Section 01 32 16 - Construction Progress Schedule for requirements for using web-based Project software.

1.3 CONTRACT DESCRIPTION

A. Work of the Project includes replacement of the existing roof membrane and related roof weatherization components to include minor alterations to penetrations and equipment support.

B. Perform Work of Contract under Stipulated Sum Contract with Owner according to Conditions of Contract.

1.4 CONTRACTOR'S USE OF SITE AND PREMISES

A. Restricted Use of Site: Contractor shall have limited use of Project Site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

B. Limits on Use of Site: Limit use of Project Site to areas within the Contract limits indicated. Do not disturb portions of Project Site beyond areas in which the Work is indicated.

C. Limits on Use of Site: Confine construction operations.

1. Limit use of Site and premises to allow:

    a. Owner occupancy.
    b. Use by the public.

2. Driveways, Walkways, and Entrances: Keep driveways, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.

    a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
    b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on Site.

D. Emergency Building Exits during Construction: Shall always remain clear.

E. Construction Operations: Limited to areas indicated on Drawings.

F. Time Restrictions for Performing Work: None.

G. Utility Outages and Shutdown:

1. Coordinate and schedule electrical and other utility outages with Owner.
2. Outages: Allow only at previously agreed upon times.
3. At least one week before scheduled outage, submit outage request plan to Architect and Owner itemizing dates, times, and duration of each requested outage.

H. Construction Plan: Before start of construction, submit a construction plan regarding access to Work, use of Site, and planned utility outages for acceptance by Owner. After acceptance of plan, construction operations shall comply with accepted plan unless deviations are accepted by Owner in writing.

1.5 WORK SEQUENCE

A. Construct Work in order to accommodate Owner's occupancy requirements during construction period. Coordinate construction schedule and operations with Architect/Engineer and Owner:

B. Construction Plan: Before start of construction, submit a construction plan regarding phasing of demolition and new Work for acceptance by Owner. After acceptance of plan, comply with accepted plan when coordinating construction sequencing unless deviations are accepted by Owner in writing.

1.6 WORK RESTRICTIONS

A. Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets, work on public streets, rights of way, and other requirements of authorities having jurisdiction (AHJ).

B. On-Site Work Hours: Work hours may scheduled as needed to meet Project requirements.
1. Work inside Building: Requires Owner approval after substantial completion.
2. Hours for Utility Shutdowns: Requires Owner approval.

C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless approval is provided in writing by Owner.

D. Noise, Vibration, Dust, and Odors: Coordinate with Owner operations that may result in high levels of noise and vibration, dust, odors, or other disruption to Owner occupancy.

E. Smoking and Controlled Substance Restrictions: Use of alcoholic beverages, marijuana, and other controlled substances on Owner's property is not permitted.

1.7 OWNER OCCUPANCY

A. Schedule and substantially complete designated portions of the Work for occupancy before Substantial Completion of the entire Work.

1. Owner intends to prepare classrooms by 8/15/2025 requiring substantial completion of renovations. Owner intends to provide student instruction in classrooms by 8/26 requiring final completion.
2. Owner's use and occupancy of designated areas before Final Completion of entire Project do not relieve Contractor of responsibility to maintain specified insurance coverages on a 100 percent basis until date of final payment.

B. Owner will occupy Site and Building during entire period of construction with minimal use prior to 8/15/2024.

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

D. Schedule Work to accommodate Owner occupancy.

1.8 PERMITS

A. Furnish all necessary permits for construction of Work. Project plans are subject to and pending approval from the Bureau of Construction Codes and Bureau of Fire Services for the State of Michigan. Plan review reference numbers will be provided upon contract award.

1.9 SPECIFICATION CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Text Color: Text used in the Specifications, including units of measure, manufacturer and product names, and other text may appear in multiple colors or underlined as part of a hyperlink; no emphasis is implied by text with these characteristics.
3. Hypertext: Text used in the Specifications may contain hyperlinks. Hyperlinks may allow for access to linked information that is not residing in the Specifications. Unless otherwise indicated, linked information is not part of the Contract Documents.

B. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 20 00

PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Schedule of Values.

B. Application for Payment.

C. Change procedures.

D. Defect assessment.

E. Unit prices.

F. Alternates.

1.2 SCHEDULE OF VALUES

A. Submit electronic file of schedule on Contractor's standard form or electronic media printout for review.

B. Submit Schedule of Values within 15 days after date of Owner-Contractor Agreement.

C. Revise schedule to list approved Change Orders with each Application for Payment.

1.3 APPLICATION FOR PAYMENT

A. Submit electronic file of each Application for Payment on Contractor's Application for Payment form.

B. Submit updated construction schedule with each Application for Payment.

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

D. Submit submittals with transmittal letter as specified in Section 01 33 00 - Submittal Procedures.

E. Submit waivers as requested by Owner.

F. Substantiating Data: When Architect or Owner requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
1. Affidavits attesting to off-Site stored products.

2. Construction Progress Schedule, revised and current as specified in Section 01 33 00 - Submittal Procedures.

1.4 CHANGE PROCEDURES

A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Architect of any error, inconsistency, omission, or apparent discrepancy.

C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for liaison with Architect; establish procedures for handling queries and clarifications.

1. Use Contractor’s standardized form for RFIs.
2. Architect may respond with a direct answer on the Request for Interpretation form, Architect's Supplemental Instruction form, or Proposal Request (Change Order Request).

D. Architect will advise of minor changes in the Work not involving adjustment to Contract Price or Contract Time by issuing supplemental instructions on Architect's Supplemental Instruction form.

E. Architect may issue Proposal Request including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change with the period of time during which the requested price will be considered valid. Contractor will prepare and submit estimate within 10 days.

F. Document requested substitutions according to Section 01 25 00 - Substitution Procedures.

G. Stipulated Price Change Order: Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for Change Order as approved by Architect.

H. Construction Change Directive: Architect may issue directive, signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work and designate method of determining any change in Contract Price or Contract Time. Promptly execute change.

I. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Architect will determine change allowable in Contract Price and Contract Time as provided in Contract Documents.

J. Maintain detailed records of Work done on time and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs for changes in the Work.

K. Document each quotation for change in Project Cost or Time with sufficient data to allow evaluation of quotation.

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

M. Correlation of Contractor Submittals:

1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Price.
2. Promptly revise Progress Schedules to reflect change in Contract Time, revise schedules to adjust times for other items of Work affected by the change, and resubmit.
3. Promptly enter changes in Record Documents.

1.5 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements.

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

C. The defective Work may remain, but unit price will be reduced at discretion of Architect and Owner.

D. Defective Work will be partially repaired according to instructions of Architect, and unit price will be reduced at discretion of Architect and Owner.

E. Authority of Architect to assess defects and identify payment adjustments is final.

F. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:

1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of the required Work.
5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 25 00

SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality assurance.

B. Product options.

C. Product substitution procedures.

1.2 QUALITY ASSURANCE

A. Contract is based on products and standards established in Contract Documents without consideration of proposed substitutions.

B. Products specified define standard of quality, type, function, dimension, appearance, and performance required.

C. Substitution Proposals: Permitted for specified products except where specified otherwise. Do not substitute products unless substitution has been accepted and approved in writing by Owner.

1.3 PRODUCT OPTIONS

A. See Section 01 60 00 - Product Requirements.

1.4 PRODUCT SUBSTITUTION PROCEDURES

A. Document 00 22 13 - Instructions to Bidders specifies time restrictions for submitting requests for substitutions during Bidding period.

B. Substitutions may be considered when a product becomes unavailable through no fault of Contractor.

C. Document each request with complete data, substantiating compliance of proposed substitution with Contract Documents, including:

1. Manufacturer's name and address, product, trade name, model, or catalog number, performance and test data, and reference standards.
2. Itemized point-by-point comparison of proposed substitution with specified product, listing variations in quality, performance, and other pertinent characteristics.
3. Reference to Article and Paragraph numbers in Specification Section.

4. Cost data comparing proposed substitution with specified product and amount of net change to Contract Sum.
5. Changes required in other Work.
6. Availability of maintenance service and source of replacement parts as applicable.
7. Certified test data to show compliance with performance characteristics specified.
8. Samples when applicable or requested.
9. Other information as necessary to assist Architect's evaluation.

D. A request constitutes a representation that Bidder or Contractor:

1. Has investigated proposed product and determined that it meets or exceeds quality level of specified product.
2. Will provide same warranty for substitution as for specified product.
3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
4. Waives claims for additional costs or time extension that may subsequently become apparent.
5. Will coordinate installation of the accepted substitute, making such changes as may be required for the Work to be complete in all respects.
6. Will reimburse Owner and Architect for review or redesign services associated with reapproval by authorities having jurisdiction.

E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals without separate written request or when acceptance will require revision to Contract Documents.

F. Substitution Submittal Procedure:

1. Submit requests for substitutions on form with all required information clearly provided.
2. Submit electronic files of Request for Substitution for consideration. Limit each request to one proposed substitution.
3. Submit Shop Drawings, Product Data, and certified test results attesting to proposed product equivalence. Burden of proof is on proposer.
4. Architect will notify Contractor in writing of decision to accept or reject request.

1.5 INSTALLER SUBSTITUTION PROCEDURES

A. Architect will consider requests for substitutions only within 7 days after date of Owner-Contractor Agreement.

B. Document each request with:

1. Installer's qualifications.
2. Installer's experience in work similar to that specified.
3. Other information as necessary to assist Architect's evaluation.

C. Substitution Submittal Procedure:

1. Submit electronic files of Request for Substitution for consideration. Limit each request to one proposed substitution.

2. Architect will notify Contractor in writing of decision to accept or reject request.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 30 00

ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Coordination and Project conditions.

B. Preconstruction meeting.

C. Site mobilization meeting.

D. Progress meetings.

E. Preinstallation meetings.

F. Closeout meeting.

G. Alteration procedures.

1.2 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and Work of various Sections of Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify that utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate Work of various Sections having interdependent responsibilities for installing, connecting to, and placing operating equipment in service.

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

1. Coordination Drawings: Prepare as required to coordinate all portions of Work. Show relationship and integration of different construction elements that require coordination during fabrication or installation to fit in space provided or to function as intended. Indicate locations where space is limited for installation and access and where sequencing and coordination of installations are important.

D. Coordination Meetings: In addition to other meetings specified in this Section, hold coordination meetings with personnel and Subcontractors to ensure coordination of Work.

E. In finished areas, conceal pipes, ducts, and wiring within construction. Coordinate locations of fixtures and outlets with finish elements.

F. Coordinate completion and clean-up of Work of separate Sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.

G. After Owner's occupancy of premises, coordinate access to Site for correction of defective Work and Work not complying with Contract Documents, to minimize disruption of Owner's activities.

1.3 PRECONSTRUCTION MEETING

A. Architect will schedule and preside over meeting after Notice of Award.

B. Attendance Required: Architect, Owner, major Subcontractors, and Contractor.

C. Minimum 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 parties in Contract, and Architect.
6. Communication procedures.
7. Procedures and processing of requests for interpretations, field decisions, submittals, substitutions, Applications for Payments, proposal request, Change Orders, and Contract closeout procedures.
8. Scheduling.
9. Critical Work sequencing.

D. Contractor: Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.4 SITE MOBILIZATION MEETING

A. Owner will schedule meeting at Project Site prior to Contractor occupancy.

B. Attendance Required: Architect, Owner, Contractor, Contractor's superintendent, and major Subcontractors.

C. Minimum Agenda:

1. Use of premises by Owner and Contractor.
2. Owner's requirements and occupancy.
3. Construction facilities and controls.
4. Temporary utilities provided by Owner.
5. Building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Procedures for testing.
9. Procedures for maintaining record documents.

10. Requirements for startup of equipment.
11. Inspection and acceptance of equipment put into service during construction period.

D. Contractor: Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.5 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at bi-weekly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, and preside over meetings.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, and Architect, Owner, as appropriate to agenda topics for each meeting.

D. Minimum Agenda:

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems impeding planned progress.
5. Review of submittal schedule and status of submittals.
6. Review of off-Site fabrication and delivery schedules.
7. Maintenance of Progress Schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on Progress Schedule and coordination.
13. Other business relating to Work.

E. Contractor: Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.6 PREINSTALLATION MEETINGS

A. When required in individual Specification Sections, convene preinstallation meetings at Project Site before starting Work of specific Section.

B. Require attendance of parties directly affecting, or affected by, Work of specific Section.

C. Notify Architect seven days in advance of meeting date.

D. Prepare agenda and preside over meeting:

1. Review conditions of installation, preparation, and installation procedures.
2. Review coordination with related Work.

E. Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

1.7 CLOSEOUT MEETING

A. Schedule Project closeout meeting with sufficient time to prepare for requesting Substantial Completion. Preside over meeting and be responsible for minutes.

B. Attendance Required: Contractor, major Subcontractors, Architect, Owner, and others appropriate to agenda.

C. Notify Architect seven days in advance of meeting date.

D. Minimum Agenda:

1. Start-up of facilities and systems.
2. Operations and maintenance manuals.
3. System demonstration and observation.
4. Operation and maintenance instructions for Owner's personnel.
5. Contractor's inspection of Work.
6. Contractor's preparation of an initial "punch list."
7. Procedure to request Architect inspection to determine date of Substantial Completion.
8. Completion time for correcting deficiencies.
9. Inspections by authorities having jurisdiction.
10. Certificate of Occupancy and transfer of insurance responsibilities.
11. Partial release of retainage.
12. Final cleaning.
13. Preparation for final inspection.
14. Closeout Submittals:

    a. Project record documents.
    b. Operating and maintenance documents.
    c. Operating and maintenance materials.
    d. Affidavits.

15. Final Application for Payment.
16. Contractor's demobilization of Site.
17. Maintenance.

E. Record minutes and distribute to participants within two days after meeting, to Architect, Owner, and those affected by decisions made.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION

3.1 ALTERATION PROCEDURES

A. Designated areas of existing facilities will be occupied for normal operations during progress of construction. Cooperate with Owner in scheduling operations to minimize conflict and to permit continuous usage.

1. Perform Work not to interfere with operations of occupied areas.
2. Keep utility and service outages to a minimum and perform only after written approval of Owner.
3. Clean Owner-occupied areas daily. Clean spillage, overspray, and heavy collection of dust in Owner-occupied areas immediately.

B. Materials: As specified in product Sections; match existing products with new and salvaged products for patching and extending Work.

C. Employ skilled and experienced installer to perform alteration and renovation Work.

D. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion. Comply with Section 01 70 00 - Execution and Closeout Requirements

E. Remove unsuitable material not marked for salvage, including rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished Work.

F. Remove debris and abandoned items from area and from concealed spaces.

G. Prepare surface and remove surface finishes to permit installation of new Work and finishes.

H. Close openings in exterior surfaces to protect existing Work from weather and extremes of temperature and humidity.

I. Remove, cut, and patch Work to minimize damage and to permit restoring products and finishes to specified condition.

J. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.

K. Where new Work abuts or aligns with existing Work, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.

L. When finished surfaces are cut so that smooth transition with new Work is not possible, terminate existing surface along straight line at natural line of division and submit recommendation to Architect for review.

M. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing smooth transition to Architect for review.

N. Trim existing doors to clear new finish. Refinish trim to specified condition.

O. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections.

P. Finish surfaces as specified in individual product Sections.

END OF SECTION

SECTION 01 32 16

CONSTRUCTION PROGRESS SCHEDULE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Web-based project management software package.

B. Digital Project data licensing.

C. Submittals.

D. Quality assurance.

E. Format for network analysis schedules.

F. Schedules.

G. Review and evaluation.

H. Updating schedules.

I. Distribution.

1.2 PROJECT MANAGEMENT CORRESPONDENCE

A. Contractor is to establish and maintain records of Project communication and documentation until final completion. Records are to be available to the Owner and Architect upon request.

1. Records shall be established and maintained for at a minimum, the following features:

a. Compilation of Project data, including Contractor, Subcontractors, Architect, Architect's administrator, Owner, and other entities involved in Project. Include names of individuals and contact information.
b. Document workflow planning, allowing management of workflow among Project entities.
c. Create, log, track, and notify Project members of Project communications required in other Specification Sections, including, but not limited to, RFIs, submittals, minor changes in the Work, Construction Change Directives, and Change Orders.
d. Track status of each Project communication in real time, and log time and date when responses are provided.
e. Procedures for handling PDFs or similar file formats, allowing markups by each entity. Provide security features to lock markups against changes once submitted.
f. Process and track payment applications.
g. Process and track contract modifications.
h. Create and distribute meeting minutes.

i. Document management for Drawings, Specifications, and coordination drawings, including revision control.
j. Management of construction progress photographs.

1.3 DIGITAL PROJECT DATA LICENSING

A. Use of Architect's Digital Data Files: Digital data files of Architect's CAD drawings will be provided by Architect for Contractor's use during construction.

B. Conditions for Use:

1. Digital data files may be used by Contractor in preparing coordination drawings and Project Record Drawings.
2. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Contract Drawings.
3. Contractor shall execute a data licensing agreement in the form acceptable to Owner and Architect.

    a. Subcontractors and other parties granted access by Contractor to Architect's digital data files shall execute a data licensing agreement in the form of Agreement acceptable to Owner and Architect.
4. The following digital data files will be furnished for each appropriate discipline:

    a. M385-04227_ARCH_R24_Phase1_Interior.

1.4 SUBMITTALS

A. Submit network schedules under transmittal letter form specified in Section 01 33 00 - Submittal Procedures.

B. Schedule Updates:

1. Overall percent complete, projected and actual.
2. Completion progress by listed activity and sub-activity, to within five days prior to submittal.
3. Changes in Work scope and activities modified since submittal.
4. Delays in submittals or resubmittals, deliveries, or Work.
5. Adjusted or modified sequences of Work.
6. Other identifiable changes.
7. Revised projections of progress and completion.

C. Narrative Progress Report:

1. Submit with each submission of Progress Schedule.
2. Summary of Work completed during the past period between reports.
3. Work planned during the next period.
4. Explanation of differences between summary of Work completed and Work planned in previously submitted report.

5. Current and anticipated delaying factors and estimated impact on other activities and completion milestones.
6. Corrective action taken or proposed.

1.5 QUALITY ASSURANCE

A. Scheduler: Contractor's personnel specializing in scheduling with two years' minimum experience in scheduling construction work of complexity comparable to the Project, and having use of computer facilities capable of delivering detailed graphic printout within 72 hours of request.

B. Contractor's Administrative Personnel: 2 years' minimum experience in using and monitoring schedules on comparable Projects.

1.6 SCHEDULES

A. Bar Chart Schedules

1. Format: Bar chart Schedule, to include at least:

    a. Identification and listing in chronological order of those activities reasonably required to complete the Work, including:

        1) Subcontract Work.
        2) Major equipment design, fabrication, factory testing, and delivery dates including required lead times.
        3) Move-in and other preliminary activities.
        4) Equipment and equipment system test and startup activities.
        5) Project closeout and cleanup.
        6) Work sequences, constraints, and milestones.

    b. Listings identified by Specification Section number.
    c. Identification of the following:

2. Horizontal time frame by month, week, and day.
3. Duration, early start, and completion for each activity and subactivity.
4. Critical activities and Project float.
5. Subschedules to further define critical portions of Work.

1.7 REVIEW AND EVALUATION

A. Participate in joint review and evaluation of schedules with Architect at each submittal.

B. Evaluate Project status to determine Work behind schedule and Work ahead of schedule.

C. After review, revise schedules incorporating results of review, and resubmit within 10 days.

1.8 UPDATING SCHEDULES

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity. Update schedules to depict current status of Work.

C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.

D. Upon approval of a Change Order, include the change in the next schedule submittal.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Prepare narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken or proposed and its effect.

1.9 DISTRIBUTION

A. Following joint review, distribute copies of updated schedules to Contractor's Project site file, Subcontractors, suppliers, Architect, Owner, and other concerned parties.

B. Instruct recipients to promptly report, in writing, problems anticipated by projections shown in schedules.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Definitions.

B. Submittal procedures.

C. Construction progress schedules.

D. Proposed product list.

E. Product data.

F. Use of electronic CAD files of Project Drawings.

G. Shop Drawings.

H. Samples.

I. Other submittals.

J. Test reports.

K. Certificates.

L. Manufacturer's instructions.

M. Manufacturer's field reports.

N. Construction photographs.

O. Contractor review.

P. Architect review.

1.2 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect responsive action.

B. Informational Submittals: Written and graphic information and physical Samples that do not require Architect responsive action. Submittals may be rejected for not complying with requirements.

1.3 SUBMITTAL PROCEDURES

A. Transmit each submittal with Architect-accepted form.

B. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.

C. Identify: Project, Contractor, Subcontractor and supplier, pertinent Drawing and detail number, and Specification Section number appropriate to submittal.

D. 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 according to requirements of the Work and Contract Documents.

E. Schedule submittals to expedite Project, and submit electronic submittals as PDF electronic files. Coordinate submission of related items.

F. For each submittal for review, allow 10 days.

G. Identify variations in Contract Documents and product or system limitations that may be detrimental to successful performance of completed Work.

H. Allow space on submittals for Contractor and Architect review stamps.

I. When revised for resubmission, identify changes made since previous submission.

J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report inability to comply with requirements.

K. Submittals not requested will not be recognized nor processed.

L. Incomplete Submittals: Architect will not review. Complete submittals for each item are required. Delays resulting from incomplete submittals are not the responsibility of Architect.

1.4 CONSTRUCTION PROGRESS SCHEDULES

A. Comply with Section 01 32 16 - Construction Progress Schedule

1.5 PROPOSED PRODUCT LIST

A. Within 15 days after date of Owner-Contractor Agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, indicate manufacturer, trade name, model or catalog designation, and reference standards.

1.6 PRODUCT DATA

A. Product Data: Action Submittal: Submit to Architect for review for assessing conformance with information given and design concept expressed in Contract Documents.

B. Submit electronic submittals as PDF electronic files.

C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.7 ELECTRONIC CAD FILES OF PROJECT DRAWINGS

A. Electronic CAD Files of Project Drawings: May only be used to expedite production of Coordination Drawings for the Project. Use for other Projects or purposes is not allowed.

B. Electronic CAD Files of Project Drawings: Distributed only under the following conditions:

1. Use of files is solely at receiver's risk. Architect does not warrant accuracy of files. Receiving files in electronic form does not relieve receiver of responsibilities for measurements, dimensions, and quantities set forth in Contract Documents. In the event of ambiguity, discrepancy, or conflict between information on electronic media and that in Contract Documents, notify Architect of discrepancy and use information in hard-copy Drawings and Specifications.
2. CAD files do not necessarily represent the latest Contract Documents, existing conditions, and as-built conditions. Receiver is responsible for determining and complying with these conditions and for incorporating addenda and modifications.
3. User is responsible for removing information and references to Contract Documents. Shop Drawings submitted with information associated with other trades or with references to Contract Documents will not be reviewed and will be immediately returned.
4. Receiver shall not hold Architect responsible for data or file clean-up required to make files usable, nor for error or malfunction in translation, interpretation, or use of this electronic information.
5. Receiver shall understand that there is no guarantee that computer viruses are not present in files or in electronic media.
6. Receiver shall not hold Architect responsible for such viruses or their consequences, and shall hold Architect harmless against costs, losses, or damage caused by presence of computer virus in files or media.

1.8 SHOP DRAWINGS

A. Shop Drawings: Action Submittal: Submit to Architect for assessing conformance with information given and design concept expressed in Contract Documents.

B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

C. When required by individual Specification Sections, provide Shop Drawings signed and sealed by a professional Engineer responsible for designing components shown on Shop Drawings.

1. Include signed and sealed calculations to support design.
2. Submit Shop Drawings and calculations in form suitable for submission to and approval by authorities having jurisdiction.
3. Make revisions and provide additional information when required by authorities having jurisdiction.

D. Submit electronic submittals as PDF electronic files.

E. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.9 SAMPLES

A. Samples: Action Submittal: Submit to Architect for assessing conformance with information given and design concept expressed in Contract Documents.

B. Samples for Selection as Specified in Product Sections:

1. Submit to Architect for aesthetic, color, and finish selection.
2. Submit Samples of finishes, textures, and patterns for Architect selection.

C. Submit Samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate Sample submittals for interfacing work.

D. Include identification on each Sample, with full Project information.

E. Submit number of Samples specified in individual Specification Sections; Architect will retain Samples.

F. Samples will not be used for testing purposes unless specifically stated in Specification Section.

G. After review, produce copies and distribute according to "Submittal Procedures" Article and for record documents described in Section 01 70 00 - Execution and Closeout Requirements.

1.10 OTHER SUBMITTALS

A. Closeout Submittals: Comply with Section 01 70 00 - Execution and Closeout Requirements.

B. Informational Submittal: Submit data for Architect’s knowledge as Contract administrator or for Owner.

C. Submit information for assessing conformance with information given and design concept expressed in Contract Documents.

1.11 TEST REPORTS

A. Informational Submittal: Submit reports for Architect's knowledge as Contract administrator or for Owner.

B. Submit test reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.12 CERTIFICATES

A. Informational Submittal: Submit certification by manufacturer, installation/application Subcontractor, or Contractor to Architect, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or product but must be acceptable to Architect.

1.13 MANUFACTURER'S INSTRUCTIONS

A. Informational Submittal: Submit manufacturer's installation instructions for Architect's knowledge as Contract administrator or for Owner.

B. Submit printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing, to Architect in quantities specified for Product Data.

C. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.14 MANUFACTURER'S FIELD REPORTS

A. Informational Submittal: Submit reports for Architect's knowledge as Contract administrator or for Owner.

B. Submit report within 48 hours of observation to Architect for information.

C. Submit reports for information for assessing conformance with information given and design concept expressed in Contract Documents.

1.15 CONSTRUCTION PHOTOGRAPHS

A. Provide photographs of Site and construction throughout progress of Work produced by an experienced person acceptable to Architect.

B. Each week submit photographs.

C. Photographs: Digital file type of acceptable quality to analyze the quality and progress of work.

D. Take Site photographs from different directions, overall Work area photographs indicating relative progress of the Work, and detailed images as needed to indicate specific conditions of the Work, 3 days maximum before submitting.

E. Take photographs as evidence of existing Project conditions.

F. Identify each image. Identify name of Project, orientation of view, date and time of view, subject matter of image, and any related project communication or documents.

G. Digital Images: Deliver complete set of digital image electronic files to Owner with Project record documents. Identify electronic media with date photographs were taken. Submit images uncropped.

1. Digital Images: Uncompressed format acceptable to Architect, produced by digital camera with minimum sensor size of 12.0 megapixels, and image resolution of not less than 4000 by 3000 pixels.
2. Date and Time: Include date and time in filename for each image.

1.16 CONTRACTOR REVIEW

A. Review for compliance with Contract Documents and approve submittals before transmitting to Architect.

B. Contractor: Responsible for:

1. Determination and verification of materials including manufacturer's catalog numbers.
2. Determination and verification of field measurements and field construction criteria.
3. Checking and coordinating information in submittal with requirements of Work and of Contract Documents.
4. Determination of accuracy and completeness of dimensions and quantities.
5. Confirmation and coordination of dimensions and field conditions at Site.
6. Construction means, techniques, sequences, and procedures.
7. Safety precautions.
8. Coordination and performance of Work of all trades.

C. Stamp, sign or initial, and date each submittal to certify compliance with requirements of Contract Documents.

D. Do not fabricate products or begin Work for which submittals are required until approved submittals have been received from Architect.

1.17 ARCHITECT REVIEW

A. Do not make "mass submittals" to Architect/Engineer. "Mass submittals" are defined as six or more submittals or items in one day or 15 or more submittals or items in one week. If "mass submittals" are received, Architect's review time stated above will be extended as necessary to perform proper review. Architect will review "mass submittals" based on priority determined by Architect.

B. Informational submittals and other similar data are for Architect's information, do not require Architect's responsive action, and will not be reviewed or returned with comment.

C. Submittals made by Contractor that are not required by Contract Documents may be returned without action.

D. Submittal approval does not authorize changes to Contract requirements unless accompanied by Change Order, Architect's Supplemental Instruction, or Construction Change Directive.

E. Owner may withhold monies due to Contractor to cover additional costs beyond the second submittal review.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Quality control.

B. Tolerances.

C. References.

D. Labeling.

E. Manufacturers' field services.

1.2 QUALITY CONTROL

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

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

C. Perform Work using persons qualified to produce required and specified quality.

D. Products, materials, and equipment may be subject to inspection by Architect and Owner. Such inspections shall not relieve Contractor of complying with requirements of Contract Documents.

E. Supervise performance of Work in such manner and by such means to ensure that Work, whether completed or in progress, will not be subjected to harmful, dangerous, damaging, or otherwise deleterious exposure during construction period.

1.3 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturers' recommended tolerances and tolerance requirements in reference standards. When such tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of standard except when more rigid requirements are specified or are required by applicable codes.

B. Conform to reference standard by date of issue current as of date of Contract Documents except where specific date is established by code.

C. Obtain copies of standards and maintain on Site when required by product Specification Sections.

D. When requirements of indicated reference standards conflict with Contract Documents, request clarification from Architect before proceeding.

E. Neither contractual relationships, duties, or responsibilities of parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference in reference documents.

1.5 LABELING

A. Attach label from agency approved by authorities having jurisdiction for products, assemblies, and systems required to be labeled by applicable code.

B. Label Information: Include manufacturer's or fabricator's identification, approved agency identification, and the following information, as applicable, on each label:

1. Model number.
2. Serial number.
3. Performance characteristics.

C. Manufacturer's Nameplates, Trademarks, Logos, and Other Identifying Marks on Products: Not allowed on surfaces exposed to view in public areas, interior or exterior.

1.6 MANUFACTURER'S FIELD SERVICES

A. When specified in individual Specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe Site conditions, conditions of surfaces and installation, quality of workmanship, startup of equipment, testing, adjusting, and balancing of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect minimum 15 days in advance of required observations. Observer is subject to approval of Architect.

C. Report observations and Site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

D. Refer to Section 01 33 00 - Submittal Procedures, "Manufacturer's Field Reports" Article.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Temporary facilities.

B. Temporary Utilities:

C. Construction Facilities:

D. Temporary Controls:

1. Barriers.
2. Enclosures and fencing.
3. Security.
4. Dust control.
5. Pest and rodent control.
6. Pollution control.

E. Removal of utilities, facilities, and controls.

1.2 TEMPORARY FACILITIES

A. Contractor and each subcontractor provide the following items as necessary for execution of the Work including associated costs:
1. Cleaning during construction.
2. Construction aids.
3. Temporary fire protection, dust control, erosion and sediment control, water control, noise control, and other necessary temporary controls.
4. Temporary barriers, barricades, and similar devices as necessary for safety and protection of construction personnel and public.
5. Temporary provisions for protection of installed Work.

1.3 TEMPORARY ELECTRICITY

A. Owner will pay cost of energy used. Exercise measures to conserve energy. Use Owner's existing power service.

B. Provide temporary electric feeder from existing building electrical service at location as directed by Owner. Do not disrupt Owner's use of service.

C. Complement existing power service capacity and characteristics as required for construction operations.

D. Provide power outlets with branch wiring and distribution boxes located as required for construction operations. Provide suitable, flexible power cords as required for portable construction tools and equipment.

E. Provide main service disconnect and overcurrent protection at convenient location.

F. Permanent convenience receptacles shall not be used during construction.

1.4 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Provide and maintain lighting for construction operations as needed.

B. Maintain lighting and provide routine repairs.

C. Permanent building lighting may be used during construction.

1.5 TEMPORARY HEATING

A. Existing heating systems may be used during construction.

B. Maintain minimum ambient temperature of 55 degrees F in areas where construction is in progress unless indicated otherwise in individual product Sections.

1.6 TEMPORARY COOLING

A. Existing cooling systems may be used during construction.

B. Maintain maximum ambient temperature of 80 degrees F in areas where construction is in progress unless indicated otherwise in individual product Sections.

1.7 TEMPORARY VENTILATION

A. Ventilate enclosed areas to achieve curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.8 SANITARY FACILITIES

A. Existing designated facilities located at project site may be used during construction operations. Maintain a clean and sanitary condition daily.

B. At end of construction, return existing facilities used for construction operations to same or better condition as original condition.

1.9 FIELD OFFICES AND SHEDS

A. Do not use existing facilities for field offices or for storage without written Owner permission.

B. Locate field offices and sheds a minimum distance of 30 feet from existing structures.

C. Storage Areas and Sheds: Size to storage requirements for products of individual Sections, allowing for access and orderly provision for maintenance and inspection of products to suit requirements in Section 01 60 00 - Product Requirements.

D. Removal: At completion of Work remove buildings, foundations, utility services, and debris. Restore areas to same or better condition as original condition.

1.10 VEHICULAR ACCESS

A. Maintain unimpeded access for emergency vehicles. Maintain driveways with turning space between and around combustible materials.

B. Maintain access to fire hydrants and control valves free of obstructions.

C. Use designated and approved existing on-Site roads for construction traffic whenever possible.

1.11 PARKING

A. Use of designated areas of existing on-Site streets and driveways used for construction traffic is permitted.

B. Use of designated areas of existing parking facilities used by construction personnel is permitted.

C. Permanent Pavements and Parking Facilities:
1. Avoid traffic loading beyond paving design capacity. Tracked vehicles are not allowed.

D. Removal, Repair:

1. Remove temporary materials and construction at Substantial Completion.
2. Repair existing facilities damaged by use, to original condition.

1.12 PROGRESS CLEANING AND WASTE REMOVAL

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

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, before enclosing spaces.

C. Broom and vacuum clean interior areas before starting surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and rubbish from Site weekly and dispose of off-Site.

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

1.13 PROJECT IDENTIFICATION

A. No signs are allowed without Owner's permission except those required by law.

B. Removal: Remove signs, framing, supports, and foundations at completion of Project and restore area.

1.14 TRAFFIC REGULATION

A. Signs, Signals, and Devices:

1. Mounted Traffic Control and Informational Signs: As approved by authorities having jurisdiction.
2. Traffic Cones, Drums, and Lights: As approved by authorities having jurisdiction.
3. Flag Person Equipment: As required by authorities having jurisdiction.

B. Flag Persons: Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

C. Flares and Lights: Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

D. Haul Routes:

1. Consult with authorities having jurisdiction and establish public thoroughfares to be used for haul routes and Site access.

E. Removal:

1. Remove equipment and devices when no longer required.
2. Repair damage caused by installation.

1.15 FIRE-PREVENTION FACILITIES

A. Prohibit smoking within buildings.

B. Establish fire watch for cutting, welding, and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.

C. Portable Fire Extinguishers: NFPA 10; 10-pound capacity, 4A-60B: C UL rating.
1. Provide minimum of one fire extinguisher in every construction trailer and storage shed.
2. Provide minimum of one fire extinguisher on roof during roofing operations using heat-producing equipment.

1.16 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

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

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

1.17 ENCLOSURES AND FENCING

A. Construction: Commercial-grade chain-link fence.

B. Provide 6-foot-high fence around construction Site as needed; equip with vehicular and pedestrian gates with locks.

C. Exterior Enclosures:

1. Provide temporary weathertight 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.
2. Provide temporary roofing as specified.

1.18 SECURITY

A. Restrictions:

1. Do not allow members of the public or media on Site except by written approval of Owner.

1.19 PEST AND RODENT CONTROL

A. Provide methods, means, and facilities to prevent pests and insects from damaging the Work or entering facility.

B. Provide methods, means, and facilities to prevent rodents from accessing or invading premises.

1.20 POLLUTION CONTROL

A. 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.

B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.21 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary utilities, equipment, facilities, and materials before Final Application for Payment inspection.

B. Clean and repair damage caused by installation or use of temporary Work.

C. Restore existing and permanent facilities used during construction to original condition. Restore 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

1.1 SECTION INCLUDES

A. Products.

B. Product delivery requirements.

C. Product storage and handling requirements.

D. Product options.

1.2 PRODUCTS

A. At minimum, comply with specified requirements and reference standards.

B. Specified products define standard of quality, type, function, dimension, appearance, and performance required.

C. Furnish products of qualified manufacturers that are suitable for intended use. Furnish products of each type by single manufacturer unless specified otherwise. Confirm that manufacturer's production capacity can provide sufficient product, on time, to meet Project requirements.

D. Do not use materials and equipment removed from existing premises except as specifically permitted by Contract Documents.

E. Furnish interchangeable components from same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

A. Transport and handle products according to manufacturer's instructions.

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

C. Provide equipment and personnel to handle products; use methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

A. Store and protect products according to manufacturer's instructions.

B. Store products with seals and labels intact and legible.

C. Store sensitive products in weathertight, climate-controlled enclosures in an environment suitable to product.

D. For exterior storage of fabricated products, place products on sloped supports aboveground.

E. Provide off-Site storage and protection when Site does not permit on-Site storage or protection.

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

G. Provide equipment and personnel to store products; use methods to prevent soiling, disfigurement, or damage.

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

1.5 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Products complying with specified reference standards or description.

B. Products Specified by Naming One or More Manufacturers: Products of one of manufacturers named and complying with Specifications; no options or substitutions allowed.

C. Products Specified by Naming One or More Manufacturers with Provision for Substitutions: Submit Request for Substitution for any manufacturer not named, according to Section 01 25 00 - Substitution Procedures.

PART 2 - PRODUCTS – Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 01 70 00

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Examination.

B. Preparation.

C. Execution.

D. Cutting and patching.

E. Protecting installed construction.

F. Starting of systems.

G. Demonstration and instruction.

H. Testing, adjusting, and balancing.

I. Closeout procedures.

J. Project record documents.

K. Operation and maintenance data.

L. Spare parts and maintenance products.

M. Product warranties and product bonds.

N. Final cleaning.

1.2 EXAMINATION

A. Verify that existing Site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new 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. Verify that utility services are available with correct characteristics and in correct locations.

1.3 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance according to manufacturer's instructions.

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 new material or substance in contact or bond.

1.4 EXECUTION

A. Comply with manufacturer's installation instructions, performing each step in sequence. Maintain one set of manufacturer's installation instructions at Project Site during installation and until completion of construction.

B. When manufacturer's installation instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

C. Verify that field measurements are as indicated on approved Shop Drawings or as instructed by manufacturer.

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

1. Secure Work true to line and level and within specified tolerances, or if not specified, industry-recognized tolerances.
2. Physically separate products in place and provide electrical insulation or protective coatings to prevent galvanic action or corrosion between dissimilar metals.
3. Exposed Joints: Provide uniform joint width and arrange to obtain best visual effect. Refer questionable visual effect choices to Architect/Engineer for final decision.

E. Allow for expansion of materials and building movement.

F. Climatic Conditions and Project Status: Install each unit of Work under conditions to ensure best possible results in coordination with entire Project.

1. Isolate each unit of Work from incompatible Work as necessary to prevent deterioration.
2. Coordinate enclosure of Work with required inspections and tests to minimize necessity of uncovering Work for those purposes.

G. Mounting Heights: Where not indicated, mount individual units of Work at industry-recognized standard mounting heights for particular application indicated.

1. Refer questionable mounting height choices to Architect/Engineer for final decision.
2. Elements Identified as Handicap Accessible: Comply with applicable codes and regulations.

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

I. Clean and perform maintenance on installed Work as frequently as necessary through remainder of construction period. Lubricate operable components as recommended by manufacturer.

1.5 CUTTING AND PATCHING

A. Employ skilled and experienced Installers to perform cutting and patching.

B. Submit written request in advance of cutting or altering elements affecting the following:

1. Structural integrity of element.
2. Integrity of weather-exposed or moisture-resistant elements.
3. Efficiency, maintenance, or safety of element.
4. Visual qualities of sight-exposed elements.
5. Work of Owner or separate Contractor.

C. Execute cutting, fitting, and patching to complete Work and to accomplish the following:

1. Fit the several parts together, to integrate with other Work.
2. Uncover Work to install or correct ill-timed Work.
3. Remove and replace defective and nonconforming Work.
4. Remove samples of installed Work for testing.
5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute Work by methods to avoid damage to other Work and to provide proper surfaces to receive patching and finishing.

E. Cut masonry and concrete materials using masonry saw or core drill.

F. Restore Work with new products according to requirements of Contract Documents.

G. Fit Work tight to pipes, sleeves, ducts, conduits, and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

I. At penetrations of fire-rated walls, partitions, ceiling, or floor construction, completely seal voids with fire-rated material to full thickness of penetrated element.

J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for assembly, refinish entire unit.

K. Identify the hazardous substances or conditions exposed during the Work to Architect for decision or remedy.

1.6 PROTECTING INSTALLED CONSTRUCTION

A. Protect installed Work and provide special protection where specified in individual Specification Sections.

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

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

D. Use durable sheet materials to protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects.

E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

F. Prohibit traffic from landscaped areas.

1.7 STARTING OF SYSTEMS

A. Coordinate schedule for startup of various equipment and systems.

B. Notify Architect and Owner seven days prior to startup of each item.

C. 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.

D. Verify that tests, meter readings, and electrical characteristics agree with those required by equipment or system manufacturer.

E. Verify that wiring and support components for equipment are complete and tested.

F. Execute startup under supervision of manufacturer's representative or Contractors' personnel according to manufacturer's instructions.

G. When specified in individual Specification Sections, require manufacturer to provide authorized representative who will be present at Site to inspect, check, and approve equipment or system installation prior to startup and will supervise placing equipment or system in operation.

H. Submit a written report in accordance with Section 013300 - Submittal Procedures stating that equipment or system has been properly installed and is functioning correctly.

1.8 DEMONSTRATION AND INSTRUCTION

A. Demonstrate operation and maintenance of products to Owner's personnel prior to date of Substantial Completion.

1.9 TESTING, ADJUSTING, AND BALANCING

A. Owner will appoint, employ, and pay for services of independent firm to perform testing, adjusting, and balancing as needed.

1.10 CLOSEOUT PROCEDURES

A. Prerequisites to Substantial Completion: Complete following items before requesting Certification of Substantial Completion, either for entire Work or for portions of Work:
   1. Complete startup, of systems and equipment, demonstrations to Owner's operating and maintenance personnel as specified in compliance with this Section.
   2. Conduct inspection to establish basis for request that Work is substantially complete.
   3. Obtain and submit releases enabling Owner's occupancy of impacted spaces in the buidling and access to services and utilities. Include certificate of occupancy, operating certificates, or similar releases from authorities having jurisdiction or utility companies.

B. Substantial Completion Inspection:

   1. When Contractor considers Work to be substantially complete, submit to Architect:

      a. Written certificate that Work, or designated portion, is substantially complete.
      b. List of items to be completed or corrected (initial punch list).

   2. Within seven days after receipt of request for Substantial Completion, Architect will make inspection to determine whether Work or designated portion is substantially complete.
   3. Should Architect determine that Work is not substantially complete:

      a. Architect will promptly notify Contractor in writing, stating reasons for its opinion.
      b. Contractor shall remedy deficiencies in Work and send second written request for Substantial Completion to Architect.
      c. Architect will reinspect Work.
      d. Redo and Inspection of Deficient Work: Repeated until Work passes Architect inspection.

   4. After Work is substantially complete, Contractor shall:

      a. Allow Owner occupancy of Project under provisions stated in specifications.
      b. Complete Work listed for completion or correction within time period stipulated.

   5. Owner will occupy portions of building as specified in Section 011000 - Summary.

C. Prerequisites for Final Completion: Complete following items before requesting final acceptance and final payment.

   1. When Contractor considers Work to be complete, submit written certification that:

      a. Contract Documents have been reviewed.
      b. Work has been examined for compliance with Contract Documents.
      c. Work has been completed according to Contract Documents.
      d. Work is completed and ready for final inspection.

   2. Submittals: Submit following:
      a. Final payment request with final releases and supporting documentation not previously submitted and accepted. Include certificates of insurance for products and completed operations where required.

b. Specified warranties, workmanship bonds, maintenance agreements, and other similar documents.
c. Accounting statement for final changes to Contract Sum.
d. Contractor's affidavit of payment of debts and claims.
e. Contractor affidavit of release of liens.
f. Consent of surety to final payment.

3. Perform final cleaning for Contractor-soiled areas according to this Section.

D. Final Completion Inspection:

1. Within seven days after receipt of request for final inspection, Architect will make inspection to determine whether Work or designated portion is complete.
2. Should Architect consider Work to be incomplete or defective:

a. Architect will promptly notify Contractor in writing, listing incomplete or defective Work.
b. Contractor shall remedy stated deficiencies and send second written request to Architect that Work is complete.
c. Architect will reinspect Work.
d. Redo and Inspection of Deficient Work: Repeated until Work passes Architect inspection.

1.11 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, not less than weekly.

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 used.
3. Changes made by Addenda, bulletin, Change Order, and modifications.

F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction as follows:

1. Include Contract modifications such as Addenda, supplementary instructions, change directives, field orders, minor changes in the Work, and change orders.
2. Include locations of concealed elements of the Work.
3. Identify and locate existing buried or concealed items encountered during Project.
4. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
5. Field changes of dimension and detail.
6. Details not on original Drawings.

G. Submit PDF electronic files of marked-up documents to Architect before Substantial Completion.

1.12 OPERATION AND MAINTENANCE DATA

A. Submit in PDF composite electronic indexed file.

1.13 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Furnish spare parts, maintenance, and extra products in quantities specified in individual Specification Sections.

B. Deliver to Project Site and place in location as directed by Owner; obtain receipt prior to final payment.

1.14 PRODUCT WARRANTIES AND PRODUCT BONDS

A. Obtain warranties and bonds executed in duplicate by responsible Subcontractors, suppliers, and manufacturers within ten days after completion of applicable item of Work.

B. Execute and assemble transferable warranty documents and bonds from Subcontractors, suppliers, and manufacturers.

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

D. Co-execute submittals when required.

E. Submit prior to final Application for Payment.

F. Time of Submittals:
1. Make submittals within ten days after date of Completion and prior to final Application for Payment.
2. For items of Work for which acceptance is delayed, submit within ten days after acceptance, listing date of acceptance as beginning of warranty or bond period.

1.15 FINAL CLEANING

A. Execute final cleaning prior to final Project assessment.

1. Employ experienced personnel or professional cleaning firm.

B. Clean equipment and fixtures used to sanitary condition with appropriate cleaning materials.

C. Replace filters of operating equipment.

D. Clean debris from roofs, gutters, downspouts, and drainage systems.

E. Clean Site; sweep paved areas, rake clean and run magnet over all landscaped surfaces.

F. Remove waste and surplus materials, rubbish, and construction facilities from Site.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not Used

END OF SECTION

SECTION 06 10 53

MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Wood furring and grounds.
   2. Concealed wood blocking for support of wall cabinets and accessories.

1.2 REFERENCE STANDARDS

A. American National Standards Institute:
   1. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. American Wood Protection Association:
   1. AWPA M4 - Standard for the Care of Preservative-Treated Wood Products.
   2. AWPA U1 - Use Category System: User Specification for Treated Wood.

C. ASTM International:
   1. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
   2. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
   3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
   4. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

D. Southern Pine Inspection Bureau:
   1. SPIB - Standard Grading Rules for Southern Pine Lumber.

E. U.S. Department of Commerce National Institute of Standards and Technology:
   1. DOC PS 1 - Construction and Industrial Plywood.
   2. DOC PS 2 - Performance Standard for Wood-Based Structural-Use Panels.
   3. DOC PS 20 - American Softwood Lumber Standard.

F. West Coast Lumber Inspection Bureau:
   1. WCLIB - Standard Grading Rules for West Coast Lumber.

G. Western Wood Products Association:
   1. WWPA 2011 Western Lumber Grade Rules, including supplements.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit technical data and application instructions on wood-preservative and fire-retardant treatment materials.

1.4 QUALITY ASSURANCE

A. Surface-Burning Characteristics:
   1. Fire-Retardant-Treated Materials: Maximum 25/450 flame-spread/smoke-developed index when tested according to ASTM E84.

B. Apply label from agency approved by authority having jurisdiction to identify each preservative-treated and fire-retardant-treated material.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Miscellaneous Framing: SPF species; 19 percent maximum moisture content after treatment.

B. Plywood: APA-rated sheathing, Grade C-D; Exposure Durability 1.

2.2 ACCESSORIES

A. Fasteners and Anchors:

   1. Fasteners: ASTM A153, hot-dip galvanized steel for high-humidity and treated wood locations, unfinished steel elsewhere.
   2. Nails and Staples: ASTM F1667.
   3. Anchors:
      a. Toggle bolt type for anchorage to hollow masonry.
      b. Expansion shield and lag bolt type for anchorage to solid masonry or concrete.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that substrate conditions are ready to receive blocking, curbing, and framing.

3.2 PREPARATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Coordinate placement of blocking, curbing, and framing items.

3.3 INSTALLATION

A. Set members level and plumb, in correct position.

B. Place horizontal members, crown side up.

C. Construct curb members of solid wood sections.

END OF SECTION

SECTION 06 41 00

ARCHITECTURAL WOOD CASEWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Custom casework.
a. Plastic-laminate-finished casework.
2. Counter tops.
a. Plastic-laminate-finished counter tops.
3. Cabinet hardware.
4. Interior finish carpentry.
a. Standing and running trim.
5. Prefinish the Work of this Section.

1.2 REFERENCE STANDARDS

A. American National Standards Institute:
1. ANSI A135.4 - Basic Hardboard.
2. ANSI A156.9 - Cabinet Hardware.
3. ANSI A208.1 - Mat-Formed Wood Particleboard.

B. APA - The Engineered Wood Association:
1. APA/EWA PS 1 - Voluntary Product Standard for Construction and Industrial Plywood.

C. Architectural Woodwork Institute, Woodwork Institute, and Architectural Woodwork Manufacturers Association of Canada:
1. AWS - Architectural Woodwork Standards.
2. Supplemented with The WI Approach.

D. ASTM International:
1. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
2. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
3. ASTM D1037 - Standard Test Methods for Evaluating Properties of Wood Base Fiber and Particle Panel Materials.
4. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
5. ASTM F1667 - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples.

E. Forest Stewardship Council:
1. FSC Guidelines - Forest Stewardship Council Guidelines.

F. Green Seal:
   1. GS-11 - Product Specific Environmental Requirements.
   2. GS-36 - Aerosol Adhesives.

G. Hardwood Plywood and Veneer Association:
   1. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood.

H. National Electrical Manufacturers Association:
   1. NEMA LD 3 - High-Pressure Decorative Laminates.

I. National Fire Protection Association:
   1. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth.

J. U.S. Department of Commerce National Institute of Standards and Technology:
   1. DOC PS 20 - American Softwood Lumber Standard.

K. Western Red Cedar Association:
   1. WRCA - Lumber Grades and Standards.

L. Window and Door Manufacturers Association:
   1. WDMA I.S.4 - Water-Repellent Treatment for Millwork.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals, including AWS Section

B. Product Data: Submit data on:
   1. High-pressure decorative laminates.
   2. Hardware accessories.

C. Shop Drawings:
   1. Indicate materials, component profiles and elevations, assembly methods, joint details, fastening methods, accessory listings, hardware location, schedule of finishes, and Certified Compliance Label on each set.

D. Samples:
   1. Submit two, 4 x 4 in samples, illustrating cabinet finish.
   2. Submit two, 4 x 4 in samples, illustrating counter top finish.
   3. Submit two samples of drawer pulls and hinges, illustrating hardware finish.

E. Delegated Design Submittals: Submit signed and sealed Shop Drawings with design calculations and assumptions for stairs, handrails, and balusters under direct supervision of licensed professional.

1.4 QUALITY ASSURANCE

A. Perform Work according to AWS, Section 6, Section 10, and Section 11; premium grade.

B. Surface Burning Characteristics: Maximum 25/450 flame-spread/smoke-developed index when tested according to ASTM E84.

C. Apply label from agency approved by authority having jurisdiction to identify each fire-retardant-treated and preservative-treated material.

D. Perform Work according to AWI standards.

1.5 QUALIFICATIONS

A. Fabricator: Company specializing in fabricating products specified in this Section with minimum three years' documented experience similar to this Project.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Protect units from moisture damage.

1.7 AMBIENT CONDITIONS

A. Section 01 50 00 - Temporary Facilities and Controls: Requirements for ambient conditions control facilities for product storage and installation.

B. Maintain storage space relative humidity within ranges indicated in AWS Section 2.

C. Subsequent Conditions: Maintain same temperature and humidity conditions in building spaces as will occur after occupancy during and after installation of Work of this Section.

1.8 EXISTING CONDITIONS

A. Field Measurements: Verify field measurements prior to fabrication. Indicate field measurements on Shop Drawings.

PART 2 - PRODUCTS

2.1 CUSTOM CASEWORK

A. Plastic-Laminate-Finished Custom Casework:
   1. Frameless construction.
   2. Style: Flush overlay.
   3. AWS Section 10.
   4. Premium grade.
   5. Exterior and Interior Exposed Surfaces: High-pressure decorative laminate over plywood.

6. Semi-Exposed Surfaces: High-pressure decorative laminate over particleboard High-pressure decorative laminate over plywood.

B. Casework Construction Details:
1. Drawer Side Joinery: Multiple dovetailed.
2. Drawer and Door Edge Profile: Square with thin, applied band.
3. Toe Base Finish: .

2.2 WOOD TREATMENT

A. Fire-Retardant Treatment: Chemically treated and pressure impregnated, having flame spread of 25 or less when tested according to ASTM E 84 and showing no evidence of significant progressive combustion when test is continued for an additional 20-minute period, interior type.

B. Provide identification on fire-retardant-treated material.

C. Deliver fire-retardant-treated materials cut to required sizes. Minimize field cutting.

D. Moisture Content after Treatment: Kiln dried (KDAT).
1. Lumber: As specified for exterior and interior lumber.
2. Plywood: Maximum 15 percent.

2.3 FABRICATION

A. Fabricate interior finish carpentry to AWS Section 6 premium grade.

B. Fabricate casework to AWS Section 10 premium grade.

C. Fabricate counter tops to AWS Section 11 premium grade.

D. Shop-assemble casework for delivery to Site in units easily handled and to permit passage through building openings.

E. Fit exposed plywood edges with PVC plastic edging. Use one piece for full length only.

F. Cap exposed high-pressure decorative laminate finish edges with material of same finish and pattern.

G. Door and Drawer Fronts: 3/4 in thick.

H. When necessary to cut and fit on-Site, fabricate materials with ample allowance for cutting. Furnish trim for scribing and Site cutting.

I. Apply high-pressure decorative laminate finish in full, uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises Locate plastic laminate joints minimum 18 in from sink cutouts.

J. Apply laminate backing sheet to reverse side of plastic- laminate-finished surfaces where required by AWS for specified grade.

K. Fabricate cabinets and counter tops with cutouts for plumbing fixtures outlet boxes fixtures and fittings. Verify locations of cutouts from on-Site dimensions. Prime paint Seal cut edges.

L. Shop-glaze glass materials using interior dry method as specified in Section 088000 - Glazing.

2.4 FINISHES

A. Sand Work smooth and set exposed nails and screws.

B. Apply wood filler in exposed nail and screw indentations.

C. On items to receive transparent finishes, use wood filler matching surrounding surfaces and types recommended for applied finishes.

D. Seal surfaces in contact with cementitious materials.

E. Finish according to Section 09 90 00 - Painting and Coating.

2.5 ACCESSORIES

A. Adhesive for High-Pressure Decorative Laminates: Type recommended by laminate manufacturer to suit application.

B. Fasteners and Anchors:
1. Fasteners: ASTM A153, hot-dip galvanized steel for high-humidity and treated wood locations, unfinished steel elsewhere.
2. Nails and Staples: ASTM F1667.

C. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; finish in concealed locations and finish in exposed locations.

D. Concealed Joint Fasteners: Threaded steel.

E. Veneer Edge Band: AWS; standard wood veneer edge band matching face veneer.

F. Plastic Edge Trim: AWS; standard PVC; color as selected.

G. Grommets: Plastic material for cutouts.

H. Shelf Standards and Rests: Formed steel channels and rests, cut for fitted rests spaced at 1 in centers; chrome finish.

I. Drawer and Door Pulls:
1. U-shaped pull, steel with chrome satin finish.
2. Size and Spacing: 4 in centers.

J. Sliding Door Pulls: Elongated shape, bronze with satin finish.

K. Cabinet Locks: Keyed cylinder, two keys for each lock, master keyed, bronze with satin finish.

L. Catches: Magnetic Touch type.

M. Drawer Slides: Self-closing, galvanized steel construction, ball bearings separating tracks, rail mounted full extension type.

N. Hinges: Concealed Grade butt knuckle disappearing type, bronze with satin finish.

O. Sliding Door Track Assemblies: Galvanized steel construction, ball bearing carriers fitted within tracks, multiple pendant suspension attachments for door.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify adequacy of backing and support framing.

C. Verify location and sizes of utility rough-in associated with Work of this Section.

3.2 PREPARATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Prime paint surfaces of woodwork items and assemblies to be in contact with cementitious materials.

3.3 INSTALLATION

A. Install interior finish carpentry according to AWS Section 6 premium grade.

B. Install casework according to AWS Section 10 premium grade.

C. Install counter tops according to AWS Section 11 premium grade.

D. Set and secure casework, interior finish carpentry, and counter tops in place; rigid, plumb, and level.

E. Use fixture attachments in concealed locations for wall-mounted components.

F. Use concealed joint fasteners to align and secure adjoining cabinet units AND counter tops.

G. Carefully scribe casework abutting other components, with maximum gaps of 1/32 in. Do not use additional overlay trim for this purpose.

H. Secure woodwork cabinet and counter bases to floor using appropriate angles and anchorages.

I. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

J. Site glaze glass materials using interior dry method specified in Section 08 80 00 - Glazing.

3.4 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Requirements for tolerances.

B. Maximum Variation from Indicated Position: 1/16 in.

C. Maximum Offset from Alignment with Abutting Materials: 1/32 in.

3.5 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for starting and adjusting.

B. Adjust moving or operating parts to function smoothly and correctly.

3.6 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.

B. Clean casework, shelves, hardware, fittings, and fixtures.

END OF SECTION

SECTION 06 61 16

SOLID SURFACING FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Cast plastic fabrications for countertops.

B. Related Requirements:

1. Section 06 10 53 - Rough Carpentry: Framing of window openings.
2. Section 07 90 00 - Joint Protection: Perimeter sealant to adjacent construction.

1.2 REFERENCE STANDARDS

A. ASTM International:
1. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. California Department of Health Services:
1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.

C. National Electrical Manufacturers Association:
1. NEMA MG 1 - Motors and Generators.

D. South Coast Air Quality Management District:
1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.

E. Underwriters Laboratories Inc.:
1. UL - Fire Resistance Directory.

1.3 SEQUENCING

A. Section 01 10 00 - Summary: Requirements for Work sequencing.

B. Sequence Work to permit installation of adjacent affected construction.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit data on specified component product..

C. Shop Drawings: Indicate dimensions, thicknesses, required clearances, tolerances, materials, colors, finishes, fabrication details, field jointing, adjacent construction, methods of support, integration of components, and anchorages.

D. Samples: Submit two samples representative of countertop, 2 by 2 inch in size, illustrating color, texture, and finish.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for closeout procedures.

B. Operation and Maintenance Data: Submit list of approved cleaning materials and procedures required; list substances harmful to component materials. Include instructions for stain removal, surface and gloss restoration.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance materials.

B. Extra Stock Materials:
1. Furnish one containers of 16 oz. of polishing cream.

1.7 QUALITY ASSURANCE

A. Surface-Burning Characteristics: Maximum 25/450 flame-spread/smoke-developed index when tested according to ASTM E84.

B. Perform Work according to standards.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience similar to this Project.

B. Fabricator: Company specializing in fabricating products specified in this Section with minimum three years' documented experience similar to this Project.

1.9 EXISTING CONDITIONS

A. Field Measurements: Verify field measurements prior to fabrication. Indicate field measurements on Shop Drawings.

1.10 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.

B. Furnish five-year manufacturer's warranty for each type of unit.

1.11 MAINTENANCE

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Furnish one containers of 16 oz. of polishing cream.

PART 2 - PRODUCTS

2.1 PLASTIC FABRICATIONS

A. Manufacturers:
1. Avonite.
2. Meganite.
3. Corian.
4. Formica Corporation.
5. Wilsonart.
6. Soliditas.
7. Substitutions: Section 01 60 00 - Product Requirements.

2.2 MATERIALS

A. Resin: Polyester type, with integral coloring, stain resistant to domestic chemicals and cleaners.

B. Polishing Cream: Compatible polishing cream to achieve specified sheen to gel coat.

C. Core Framing: Softwood lumber, clear and free of knots.

D. Adhesive: seamless adhesive,color matched, cartridge dispensed.

2.3 FABRICATION

A. Fabricate components by mold to achieve shape and configuration.

B. Gel coat exposed finish surfaces smooth and polish to low sheen.

C. Radius corners and edges.

D. Cure components prior to shipment, except sheet materials requiring Site handling.

2.4 FINISHES

A. Color: color as selected from manufacturer standards.

B. Exposed-to-View Surface Visual Texture: Marbleized design.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify that joint preparation and affected dimensions are acceptable.

3.2 PREPARATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Provide anchoring devices for installation and embedding.

C. Provide templates and rough-in measurements.

3.3 INSTALLATION

A. Align Work plumb and level.

B. Install according to manufacturer's printed instructions.

C. Rigidly anchor to substrate to prevent misalignment.

D. Seal to adjacent construction as specified in Section 07 90 00 - Joint Protection.

3.4 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Requirements for tolerances.

B. Maximum Variation from Indicated Dimension: 1/8 inch.

C. Maximum Offset from Indicated Position: 1/8 inch.

3.5 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.

B. Clean and polish fabrication surfaces.

END OF SECTION

SECTION 07 90 00

JOINT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Sealants and joint backing.
   2. Accessories.

B. Related Requirements:
   1. Section 04 20 19 – Veneer Unit Masonry
   2. Section 07 27 26 – Fluid-Applied Membrane Air Barriers: Sealants required in conjunction with air barriers.
   3. Section 0784 00 - Firestopping: Firestopping sealants.
   4. Section 08 80 00 - Glazing: Glazing sealants and accessories.

1.2 REFERENCE STANDARDS

A. ASTM International:
   1. ASTM C834 - Standard Specification for Latex Sealants.
   2. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
   3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
   4. ASTM C1193 - Standard Guide for Use of Joint Sealants.
   5. ASTM D1056 - Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
   6. ASTM D1667 - Standard Specification for Flexible Cellular Materials - Poly(Vinyl Chloride) Foam (Closed-Cell).
   7. ASTM D2628 - Standard Specification for Preformed Polychloroprene Elastomeric Joint Seals for Concrete Pavements.

B. California Department of Health Services:
   1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers.

C. South Coast Air Quality Management District:
   1. SCAQMD Rule 1168 - Adhesive and Sealant Applications.

1.3 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with Sections referencing this Section.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.

C. Samples: Submit two samples, 2 by 2 inches in size, illustrating sealant colors for selection.

D. Manufacturer Instructions: Submit special procedures, surface preparation requirements, and perimeter conditions requiring special attention.
   1. Warranty: Include coverage for installed sealants and accessories failing to achieve seal, exhibit loss of adhesion or cohesion, and sealants which do not cure.

1.5 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

B. Applicator: Company specializing in performing Work of this Section with minimum three years' documented experience.

1.6 MOCKUPS

A. Section 01 40 00 - Quality Requirements: Requirements for mockup.

B. Construct mockup of sealant joints in conjunction with window and wall mockups as specified in other Sections.

C. Construct mockup with specified sealant types and with other components as indicated.

D. Preparation and Priming:
   1. Determine requirements based on manufacturer recommendations.
   2. Correct failure of sealant tests on mockup if required.

E. Verify that sealants, primers, and other components do not stain adjacent materials.

F. Locate where directed by Architect/Engineer.

G. Incorporate accepted mockup as part of Work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

C. Store products according to manufacturer instructions.

D. Protection:
1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.8 AMBIENT CONDITIONS

A. Section 01 50 00 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.

B. Maintain temperature and humidity as recommended by sealant manufacturer during and after installation.

1.9 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.

B. Furnish two-year installer's warranty.

C. Include coverage for:
1. Installed sealants and accessories failing to achieve airtight and watertight seal.
2. Installed sealants and accessories exhibiting loss of adhesion or cohesion.
3. Sealants that do not cure.

PART 2 - PRODUCTS

2.1 JOINT SEALERS

A. Manufacturers:
1. Dow Corning Corp.
2. GE Silicones
3. Pecora Corp.
4. Sika Corp.
5. Tremco Sealants & Waterproofing
6. Substitutions: As specified in Section 01 60 00 - Product Requirements.

2.2 JOINT SEALERS BY APPLICATION

A. High-Performance General-Purpose Exterior (Nontraffic) Sealant:
1. Material: Silicone.
2. Comply with ASTM C920, Grade NS, Class 25, Uses M, G, and A.
3. Type: Single-component.
4. Color: Standard; match finished surfaces.
5. Applications:

a. Control, expansion, and soft joints in masonry.
b. Joints between concrete and other materials.
c. Joints between metal frames and other materials.
d. Other exterior nontraffic joints for which no other sealant is indicated.

B. General-Purpose Exterior (Nontraffic) Sealant:
1. Description: Acrylic; solvent-release curing.
2. Comply with ASTM C920, Grade NS, Class 12-1/2, Uses M, G, and A.
3. Type: Single- or multiple-component.
4. Color: Standard; match finished surfaces.
5. Applications:
a. Control, expansion, and soft joints in masonry.
b. Joints between concrete and other materials.
c. Joints between metal frames and other materials.
d. Other exterior nontraffic joints for which no other sealant is indicated.

C. General-Purpose Traffic-Bearing Sealant:
1. Material: Polyurethane.
2. Comply with ASTM C920, Grade P, Class 25, Use T.
3. Type: Single- or multiple-component.
4. Color: Standard; match finished surfaces.
5. Applications: Exterior and interior pedestrian and vehicular traffic-bearing joints.

D. Exterior Compressible Gasket Expansion Joint Sealer:
1. Description: Hollow neoprene (polychloroprene) compression gasket.
2. Comply with ASTM D2628.
3. Color: Black.
4. Size and Shape: As indicated on Drawings.
5. Applications: Exterior wall expansion joints.

E. Exterior Metal Lap Joint Sealant:
1. Material: Butyl or polyisobutylene.
2. Type: Non-drying, non-skinning, non-curing.
3. Applications: Concealed sealant bead in sheet metalwork and siding overlaps.

F. General Purpose Interior Sealant:
1. Material: Acrylic-emulsion latex.
2. Comply with ASTM C834.
3. Type: Single-component; paintable.
4. Color: Standard; match finished surfaces.
5. Applications:
a. Interior wall and ceiling control joints.
b. Joints between door and window frames and wall surfaces.
c. Other interior joints for which no other type of sealant is indicated.

G. Sanitary Sealant:
1. Material: Silicone.
2. Comply with ASTM C920, Uses M and A.
3. Type: Single-component; mildew resistant.
4. Color: Clear.
5. Applications:

a. Joints between plumbing fixtures and floor and wall surfaces.
b. Joints between countertops and wall surfaces.

H. Acoustical Sealant:
1. Material: Butyl or acrylic.
2. Comply with ASTM C920, Grade NS, Class 12-1/2, Uses M and A.
3. Type: Single-component; solvent-release curing; non-skinning.
4. Applications: Concealed locations only at acoustically rated construction.

2.3 JOINT SEALERS BY TYPE

A. Acrylic-Emulsion Latex Sealant:
1. Comply with ASTM C834.
2. Type: Single-component; non-staining, non-bleeding, non-sagging.
3. Color: Standard; match finished surfaces.
4. Movement Capability: 2 to 5 percent.
5. Service Temperature Range: 2 to 160 deg. F.
6. Hardness Range: Shore A, 15 to 40.

B. Acrylic Sealant:
1. Comply with ASTM C920, Grade NS, Class 12-1/2, Uses NT, M, A, and O.
2. Type: Single-component; solvent release curing; non-staining, non-bleeding, non-sagging.
3. Color: Standard; match finished surfaces.
4. Movement Capability: Plus and minus 12-1/2 percent.
5. Service Temperature Range: Minus 13 to plus 180 deg. F.
6. Hardness Range: Shore A, 25 to 50.

C. Butyl Sealant:
1. Comply with ASTM C920, Grade NS, Class 12-1/2, Use NT.
2. Type: Single-component; solvent release curing; non-skinning, non-sagging.
3. Color: As selected.
4. Movement Capability: Plus and minus 12-1/2 percent.
5. Service Temperature Range: Minus13 to plus 180 deg. F.
6. Hardness Range: Shore A, 10 to 30.

D. Silicone Sealant:
1. Comply with ASTM C920, Grade NS, Class 25, Uses NT and A.
2. Type: Single-component; neutral curing; non-sagging, non-staining, non-bleeding; fungus resistant.
3. Color: Standard, match finished surfaces Clear.
4. Movement Capability: Plus 40 percent, minus 25 percent.
5. Service Temperature Range: Minus 65 to plus 180 deg. F.
6. Hardness Range: Shore A, 15 to 35.

2.4 ACCESSORIES

A. Primer:
1. Type: Non-staining.

2. As recommended by sealant manufacturer to suit application.

B. Joint Cleaner:
1. Type: Non-corrosive and non-staining.
2. As recommended by sealant manufacturer.
3. Compatible with joint forming materials.

C. Joint Backing:
1. Description: Round foam rod, compatible with sealant.
2. Comply with ASTM D1056, sponge or expanded rubber D1667, closed-cell PVC.
3. Size: Oversized 30 to 50 percent larger than joint width.

D. Bond Breaker:
1. Description: Pressure-sensitive tape.
2. As recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for application examination.

B. Verify that substrate surfaces and joint openings are ready to receive Work of this Section.

C. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for application preparation.

B. Comply with ASTM C1193.

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

D. Clean and prime joints.

E. Protect elements surrounding Work of this Section from damage or disfiguration.

3.3 APPLICATION

A. Comply with ASTM C1193.

B. Acoustical Sealant:
1. Comply with ASTM C919.
2. Provide sealant bead between top stud runner and structure, and between bottom stud track and floor.

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

D. Install bond breaker where joint backing is not used.

E. Apply sealant free of air pockets, foreign embedded matter, ridges, and sags.

F. Joint Tooling: Concave.

G. Compression Gaskets:
   1. Avoid joints except at ends, corners, and intersections.
   2. Seal joints with adhesive.
   3. Install with face 1/8 to 1/4 inch below adjoining surface.

3.4 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.

B. Clean adjacent soiled surfaces.

3.5 PROTECTION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for protecting finished Work.

B. Protect sealants until cured.

END OF SECTION

SECTION 08 12 13

STANDARD HOLLOW METAL FRAMES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes fire rated and non-rated steel frames for doors and interior glazed lights.

B. Related Sections:
1. Section 08 14 16 – Flush Wood Doors.
2. Section 08 71 00 - Door Hardware: Hardware and weatherstripping.
3. Section 08 80 00 - Glazing.

1.2 REFERENCES

A. American National Standards Institute:
1. ANSI A250.8 - Recommended Specifications for Standard Steel Doors and Frames.

B. ASTM International:
1. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

C. National Fire Protection Association:
1. NFPA 80 - Standard for Fire Doors, Fire Windows.
2. NFPA 105 - Standard for the Installation of Smoke Door Assemblies and other Opening Protectives.
3. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

D. Underwriters Laboratories Inc.:
1. UL 10B - Fire Tests of Door Assemblies.
2. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
3. UL 1784 - Air Leakage Tests of Door Assemblies.

1.3 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate frame elevations, reinforcement, anchor types and spacing, location of cut-outs for hardware, and finish.

C. Product Data: Submit frame configuration and finishes.

D. Manufacturer's Installation Instructions: Submit special installation instructions.

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

1.4 QUALITY ASSURANCE

A. Conform to requirements of ANSI A250.8.

1.5 QUALIFICATIONS

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

1.6 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Accept frames on site in manufacturer's packaging. Inspect for damage.

C. Break seal on-site to permit ventilation.

1.7 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate Work with frame opening construction, door, and hardware installation.

C. Sequence installation to accommodate required door hardware electric wire connections.

PART 2 - PRODUCTS

2.1 STANDARD STEEL FRAMES

A. Manufacturers:
   1. Amweld Building Products, Inc.
   2. Ceco Door Products
   3. Republic Builders Products
   4. Steelcraft.
   5. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description: Standard shop fabricated steel frames, fire rated and non-rated types.
   1. Frames: To suit ANSI A250.8 Grade and Model of door specified in Section 081314.
   2. Exterior Frames, Galvanized:
      a. Level 3, nominal 16 gage/0.053 inch thick material, base metal thickness.
   3. Interior Frames:
      a. Level 2, nominal 16 gage/0.053 inch thick material, base metal thickness.

2.2 ACCESSORIES

A. Removable Stops: Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws.

B. Bituminous Coating: Non-asbestos fibered asphalt emulsion.

C. Primer: ANSI A250.10 rust inhibitive type.

D. Silencers: Resilient rubber fitted into drilled hole.

E. Weatherstripping: Specified in Section 08 71 00.

2.3 FABRICATION

A. Fabricate frames for knock down field assembly.

B. Mullions for Double Doors: Removable type, of same profiles as jambs.

C. Transom Bars for Glazed Lights: Fixed type, of same profiles as jamb and head.

D. Fabricate frames with hardware reinforcement plates welded in place. Provide mortar guard boxes.

E. Reinforce frames wider than 48 inches with roll formed steel channels fitted tightly into frame head, flush with top.

F. Prepare frames for silencers. Provide three single silencers for single doors and mullions of double doors on strike side. Provide two single silencers on frame head at double doors without mullions.

G. Fabricate frames to suit masonry wall coursing with 4 inch head member.

2.4 SHOP FINISHING

A. Steel Sheet: Galvanized to ASTM A653/A653M.

B. Primer: Baked.

C. Factory Finish: Thermosetting epoxy of color as selected.

D. Coat inside of frame profile with bituminous coating to minimum thickness of 1/16 inch.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify opening sizes and tolerances are acceptable.

3.2 INSTALLATION

A. Install frames in accordance with ANSI A250.8.

B. Coordinate with masonry and gypsum board wall construction for anchor placement.

C. Coordinate installation of glass and glazing specified in Section 08 80 00.

D. Coordinate installation of frames with installation of hardware specified in Section 08 71 00 and doors in Section 08 14 16.

E. Install roll formed steel reinforcement channels between two abutting frames. Anchor to structure and floor.

3.3 ERECTION TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Maximum Diagonal Distortion: 1/16” measured with straight edges, crossed corner to corner.

END OF SECTION

SECTION 081416

FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Flush wood doors.
2. Door glazing.
3. Door louvers.

B. Related Requirements:
1. Section 08 12 13 - Standard Hollow Metal Frames.
2. Section 08 71 00 - Door Hardware.
3. Section 08 80 00 - Glazing.

1.2 REFERENCE STANDARDS

A. American National Standards Institute:
1. ANSI A135.4 - Basic Hardboard.

B. ASTM International:
1. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
2. ASTM E413 - Classification for Rating Sound Insulation.

C. Architectural Woodwork Institute:
1. AWI AWS - Architectural Woodwork Standards.

D. California Department of Health Services:
1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.

E. Consumer Products Safety Commission:
1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing.

F. Forest Stewardship Council:
1. FSC Guidelines - Forest Stewardship Council Guidelines.

G. Hardwood Plywood and Veneer Association:
1. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood.

H. National Electrical Manufacturers Association:
1. NEMA LD 3 - High Pressure Decorative Laminates.

I. National Fire Protection Association:
   1. NFPA 80 - Standard for Fire Doors, Fire Windows.
   2. NFPA 105 - Standard for the Installation of Smoke Door Assemblies and other Opening Protectives.
   3. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

J. National Institute of Justice
   1. NIH 0108.1 - Ballistic Resistant Protective Materials.

K. Underwriters Laboratories Inc.:
   1. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
   2. UL 1784 - Air Leakage Tests of Door Assemblies.

L. Wood Window and Door Manufacturers Association:
   1. WDMA I.S 1A - Architectural Wood Flush Doors.

1.3 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate Work with door opening construction, door frame and door hardware installation.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Product Data:
   1. Submit data for door core materials and construction.
   2. Submit data for veneer species, type and characteristics.
   3. Submit data for factory finishes.

C. Shop Drawings:
   1. Indicate door opening criteria, elevations, sizes, types, swings, undercuts required, special beveling, special blocking for hardware, and factory machining criteria.
   2. Indicate cutouts for glazing and louvers.

D. Samples:
   1. Submit two samples of door veneer, 6x6 inch in size illustrating wood grain, stain color, and sheen.

E. Manufacturers' Instructions: Submit special installation instructions.

F. Qualification Statements:
   1. Submit manufacturer experience qualifications.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with AWI AWS Section 9, Premium Grade.

B. Finish doors in accordance with AWI AWS Section 5 Premium Grade.

C. Fire Rated Door Construction: Conform to one of the following:
   1. NFPA 252; with neutral pressure level at 40 inches maximum above sill at 5 minutes into test.
   2. UL 10C.
   3. 20-Minute Fire Rated Corridor and Smoke Barrier Doors: Fire tested without hose stream test.

D. Installed Fire Rated Door Assembly: Conform to NFPA 80 for fire rated class as indicated on Drawings.

E. Attach label from agency approved by authority having jurisdiction to identify each fire rated door.
   1. Indicate temperature rise rating for stair doors.
   2. Attach smoke label to smoke and draft control doors.

1.6 QUALIFICATIONS

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

1.7 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer when stored more than one week.

C. Accept doors on site in manufacturer's packaging. Inspect for damage.
   1. Break seal on site to permit ventilation.

1.8 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Product warranties and product bonds.

B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

C. Interior Doors:
   1. Factory Finished Doors: Furnish manufacturer's life of installation warranty.

PART 2 - PRODUCTS

2.1 FLUSH WOOD DOORS

A. Manufacturers:
   1. Eggers.
   2. Graham Manufacturing Corp.
   3. Marshfield Door Systems.
   4. Mohawk Flush Doors, Inc.
   5. Substitutions: Section 01 60 00 - Product Requirements.

B. Flush Interior Doors: Solid core.
   1. Thickness: 1-3/4 inches
   2. Core: PC.
   3. Face Construction: five ply.
   4. Performance Duty Level: Heavy duty.
   5. Quality Grade: Premium.

C. Performance / Design Criteria:
   1. Performance Duty Level: WDMA I.S. 1A.
   2. Fire Resistance: As indicated on Drawings.
   3. Sound Transmission Resistance: ASTM E413; minimum STC 35 for door and frame assemblies indicated as acoustically rated.

2.2 MATERIALS

A. Door Cores: AWI AWS Section 9.
   1. Solid Core, Non-Fire Rated:
      a. Type: PC; particleboard.
   2. Solid Core, Fire Rated: Category A for positive pressure fire test.
      a. Type FD; fire resistive composite.

B. Interior Door Faces:
   1. Opaque Finished Faces: Close-grain hardwood veneer.
   2. Transparent Finished Faces: Wood veneer.
      a. Species: Red oak.
      b. Veneer Cut: Rotary cut.
      c. Veneer Matching: Book matched.
      d. Face Matching: Running.

2.3 FABRICATION

A. Fabricate doors in accordance with AWI AWS Section 9 requirements.

B. Furnish lock blocks at top of door for closer for hardware reinforcement.

C. Vertical Exposed Edge of Stiles: Wood veneer matching door facing.

D. Fit door edge trim to edge of stiles after applying veneer facing.

E. Bond edge banding to cores.

F. Factory machine doors for finish hardware in accordance with hardware requirements and dimensions. Do not machine for surface hardware.

G. Factory fit doors for frame opening dimensions identified on shop drawings.

H. Provide edge clearances in accordance with AWI AWS Section 9.

2.4 FINISHES

A. Finish work in accordance with AWI AWS Section 5; Premium Grade.

B. Factory finish doors in accordance with approved sample.

C. Seal door top edge with color sealer to match door facing.

2.5 ACCESSORIES

A. Door Glazing:
   1. Glass: As specified in Section 08 80 00.
   2. Glazing Stops: Rolled steel channel shape, mitered corners; prepared for countersink style tamper proof screws.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.2 INSTALLATION

A. Install doors in accordance with AWI AWS Section 9 and manufacturer's instructions.

B. Field Fitting and Trimming:
   1. Trim non-rated door width by cutting equally on both jamb edges.
   2. Trim door height by cutting bottom edges to maximum of 3/4 inch.
      a. Trim fire door height at bottom edge only, in accordance with fire rating requirements.

C. Coordinate installation of doors with installation of frames specified in Section 081213 and hardware specified in Section 08 71 00.

D. Coordinate installation of glass and glazing specified in Section 088000.

3.3 TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Conform to AWI AWS Section 9 requirements for the following:
   1. Fit and clearance tolerances.
   2. Gaps.
   3. Flushness.
   4. Flatness.
   5. Squareness.

3.4 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for starting and adjusting.

B. Adjust door for smooth and balanced door movement.

C. Adjust door closer for full closure.

END OF SECTION

SECTION 08 41 13
ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 GENERAL

1.1 SUMMARY

A. Section includes aluminum-framed storefronts including aluminum and glass doors and frames including hardware, glass, infill panels, and safety and security window film.

B. Related Sections:
1. Section 07 90 00 - Joint Protection: System perimeter sealant and back-up materials.
2. Section 08 71 00 - Door Hardware: Mortised hardware reinforcement requirements affecting framing members; hardware items other than specified in this section.
3. Section 08 80 00 - Glazing.
4. Section 08 87 16 – Safety and Security Window Film.

1.2 REFERENCES

A. Aluminum Association:
1. AA ADM 1 - Aluminum Design Manual.

B. American Architectural Manufacturers Association/Window & Door Manufacturers Association:
1. AAMA/WDMA 101/I.S.2 - Specification for Windows, Doors and Unit Skylights.
2. AAMA 502 - Voluntary Specification for Field Testing of Windows and Sliding Glass Doors.
3. AAMA 503 - Voluntary Specification for Field Testing of Metal Storefronts. Curtain Wall and Sloped Glazing Systems.
4. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum.
5. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections.
6. AAMA 2603 - Voluntary Specification, Performance Requirements and Test Procedures for Pigmented Organic Coatings on Aluminum Extrusions and Panels.
7. AAMA 2604 - Voluntary specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
8. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
9. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site.
10. AAMA MCWM-1 - Metal Curtain Wall Manual.
11. AAMA SFM-1 - Aluminum Store Front and Entrance Manual.

C. American Society of Civil Engineers:
1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

D. ASTM International:
1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

3. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
4. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
5. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
6. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
7. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
8. ASTM E330 - Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
9. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.
10. ASTM E547 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Differential.
11. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Curtain Walls, and Doors by Uniform or Cyclic Static Air Pressure Difference.
12. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
13. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

E. National Fenestration Rating Council Incorporated:
1. NFRC 100 - Procedures for Determining Fenestration Product U-Factors.

F. SSPC: The Society for Protective Coatings:
1. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).
2. SSPC Paint 25 - Red Iron Oxide, Zinc Oxide, Raw Linseed Oil, and Alkyd Primer.

1.3 SYSTEM DESCRIPTION

A. Aluminum-framed storefront system includes tubular aluminum sections, aluminum and glass entrances, shop fabricated, factory finished, glass and glazing, field applied window film, infill, related flashings, anchorage and attachment devices.

B. System Assembly: Site assembled.

1.4 PERFORMANCE REQUIREMENTS

A. System Design: Design and size components to withstand dead and live loads caused by positive and negative wind pressure acting normal to plane of wall, including building corners.
1. As calculated in accordance with applicable code, as tested in accordance with ASTM E330.

B. Deflection: Limit mullion deflection to flexure limit of glass; with full recovery of glazing materials.

C. System Assembly: Accommodate without damage to components or deterioration of seals, movement within system, movement between system and peripheral construction, dynamic loading and release of loads, deflection of structural support framing.

D. Air Infiltration: Limit air leakage through assembly to 0.06 cfm/min/sq ft of wall area, measured at reference differential pressure across assembly of6.24 psf as measured in accordance with ASTM E283.

E. Air and Vapor Seal: Maintain continuous air barrier and vapor retarder throughout assembly, primarily in line with inside pane of glass and heel bead of glazing compound.

F. Vapor Seal: Limit vapor seal with interior atmospheric pressure of 1 inch sp, 72 degrees F, 40 Percent RH without seal failure.

G. Condensation Resistance Factor: CRF of not less than 45 when measured in accordance with AAMA 1503.

H. Water Leakage: None, when measured in accordance with ASTM E331 with test pressure difference of 20 percent of design pressure, with minimum differential of 2.86 lbf/sq ft and maximum of 12.00 lbf/sq ft.

I. Thermal and Solar Heat Transmittance of Assembly (U Value and SHGC): Comply with ICC IEEC for climate zone in which project is located.

J. Expansion / Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over 12 hour period without causing detrimental effect to system components and anchorage.

K. System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior by weep drainage network.

1.5 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related Work and expansion and contraction joint location and details.

C. Product Data: Submit component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.

D. Samples: Submit two samples 12 x 12 inches in size illustrating finished aluminum surface.

E. Design Data: Indicate framing member structural and physical characteristics, dimensional limitations.

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

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with AAMA SFM-1.

B. Surface Burning Characteristics:
   1. Foam Insulation: Maximum 75/450 flame spread/smoke developed index when tested in accordance with ASTM E84.

C. Apply label from agency approved by authority having jurisdiction to identify each foam plastic insulation board.

1.7 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing aluminum glazing systems with minimum three years documented experience.

B. Design structural support framing components under direct supervision of Professional Engineer experienced in design of this Work and licensed at Project location.

1.8 PRE-INSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Pre-installation meeting.

B. Convene minimum one week prior to commencing work of this section.

1.9 DELIVERY, STORAGE, AND PROTECTION

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Handle Products of this section in accordance with AAMA MCWM-1 - Curtain Wall Manual #10.

C. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings which bond when exposed to sunlight or weather.

1.10 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Do not install sealants nor glazing materials when ambient temperature is less than 40 degrees F during and 48 hours after installation.

1.11 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate the Work with installation of air barrier and vapor retarder components or materials.

1.12 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Product warranties and product bonds.

B. Furnish five year manufacturer warranty for glazed units.

PART 2 PRODUCTS

2.1 ALUMINUM-FRAMED STOREFRONTS

A. Manufacturers:
   1. Kawneer Co., Inc. Series 500 Swing Doors, Trifab VG 451T Frames.
   2. EFCO Corp., series D500
   3. Tubelite
   4. Substitutions: Section 01 60 00 - Product Requirements.

B. Product Description:
   1. Aluminum Frame: Thermally broken; applied glazing stops; drainage holes; internal weep drainage system. Frames for interior glazing need not to be thermally broken.
   2. Mullions: Profile of extruded aluminum with internal reinforcement of aluminum or shaped steel structural section.
   3. Doors: Aluminum framed glass doors; 1-3/4 inches thick, nominal 5 inch wide top rail and vertical stiles, nominal10 inch wide bottom rail; square glazing stops.

2.2 COMPONENTS

A. Extruded Aluminum: ASTM B221; 6063 alloy, T5 temper typical, 6061 alloy, T6 temper for extruded structural members.

B. Steel Sections: ASTM A36/A36M; shaped to suit mullion sections, galvanized.

C. Glass: Specified in Section 08 80 00.

D. Glazing Materials: Storefront manufacturer’s standard types to suit application and to achieve weather, moisture, and air infiltration requirements.

E. Window Film: Refer to drawing part 1: A606, Part 2: A603.

F. Hardware: Furnish manufacturer’s standard door hardware for types of doors and applications indicated, and as specified below.
   1. Weather Stripping, Sill Sweep Strips, Thresholds, Hinges, Push/Pull Handles, and Closer: Manufacturers standard type to suit application.
   2. Sill Sweep Strips: resilient seal type, of neoprene compound.
   3. Threshold: Extruded aluminum, one piece for each door opening, non-slip surface.
   4. Hinges: butt type; top, intermediate, and bottom.

G. Sealant and Backing Materials:

1. Sealant Used Within System (Not Used for Glazing): Manufacturer's standard materials to achieve weather, moisture, and air infiltration requirements.
2. Perimeter Sealant: Specified in Section 07 90 00.

H. Fasteners: Stainless steel.

2.3 FABRICATION

A. Fabricate components with minimum clearances and shim spacing around perimeter of assembly, yet enabling installation and dynamic movement of perimeter seal.

B. Accurately fit and secure joints and corners. Make joints flush, hairline, and weatherproof.

C. Prepare components to receive anchor devices. Fabricate anchors.

D. Arrange fasteners and attachments to conceal from view.

E. Prepare components with internal reinforcement for door hardware.

F. Reinforce framing members for imposed loads.

2.4 SHOP FINISHING

A. Dark Bronze Anodized Aluminum Surfaces: AAMA 611, AA-M12C22A41 non-specular as fabricated mechanical finish, medium matte chemical finish, and Architectural Class I 0.7 mils clear anodized coating.

B. Apply bituminous paint to concealed aluminum and steel surfaces in contact with cementitious or dissimilar metals.

PART 3 EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify dimensions, tolerances, and method of attachment with other Work.

C. Verify wall openings and adjoining air and vapor seal materials are ready to receive Work of this Section.

3.2 INSTALLATION

A. Install wall system in accordance with AAMA MCWM-1 - Metal Curtain Wall, Window, Store Front and Entrance - Guide Specifications Manual.

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. Coordinate attachment and seal of perimeter air and vapor retarder materials.

H. Install integral flashings and integral joint sealers.

I. Set thresholds in bed of mastic and secure.

J. Install hardware using templates provided.

K. Coordinate installation of glass with Section 08 80 00 ; separate glass from metal surfaces.

L. Coordinate installation of perimeter sealants with Section 07 90 00.

3.3 ERECTION TOLERANCES

A. Section 01 40 00 - Quality Requirements: Tolerances.

B. Maximum Variation from Plumb: 0.06 inches every 3 ft non-cumulative or 1/16 inches per 10 ft, whichever is less.

C. Maximum Misalignment of Two Adjoining Members Abutting in Plane: 1/32 inch.

3.4 FIELD QUALITY CONTROL

A. Section 01 70 00 - Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.

B. Inspection to monitor quality of installation and glazing.

C. Test to AAMA 501.

3.5 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting and balancing.

B. Adjust operating hardware for smooth operation.

3.6 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Remove protective material from pre-finished aluminum surfaces.

C. Wash down surfaces with solution of mild detergent in warm water, applied with soft, clean wiping cloths. Take care to remove dirt from corners. Wipe surfaces clean.

D. Remove excess sealant by method acceptable to sealant manufacturer.

3.7 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

B. Protect finished Work from damage.

3.8 SCHEDULES – See drawings.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes hardware for wood steel and aluminum doors.

1. Provide door gaskets, including weatherstripping and seals, and thresholds.

B. Related Sections:
1. Section 08 12 13 - Standard Hollow Metal Frames: Silencers integral with steel frames.
2. Section 08 13 14 - Standard Steel Doors.
3. Section 08 14 16 - Flush Wood Doors.
4. Section 08 31 13 - Access Doors and Frames: Door hardware.
5. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts: Door hardware by entrance supplier, except as noted.
6. Section 10 14 00 - Signage.
7. Section 25 50 00 - Integrated Automation Facility Controls: Building monitoring system.
8. Section 26 05 19 - Low-Voltage Electrical Power Conductors and Cables: Power supply to electric hardware devices.
9. Section 28 16 00 - Intrusion Detection: Security system.
10. Section 28 31 11 - Fire Detection and Alarm: Electrical connection to activate door closers, and release magnetic holders.

1.2 REFERENCES

A. American National Standards Institute:

1. ANSI A156.1 - Butts and Hinges.
2. ANSI A156.3 - Exit Devices.
3. ANSI A156.4 - Door Controls - Closures.
4. ANSI A156.5 - Auxiliary Locks and Associated Products.
5. ANSI A156.6 - Architectural Door Trim.
6. ANSI A156.7 - Template Hinge Dimensions.
7. ANSI A156.8 - Door Controls - Overhead Holders.
8. ANSI A156.13 - Mortise Locks and Latches.
9. ANSI A156.15 - Closer Holder Release Devices.
10. ANSI A156.16 - Auxiliary Hardware.
11. ANSI A156.18 - Materials and Finishes
12. ANSI A156 - Complete Set of 24 BHMA Standards (A156 Series) with Binder.

B. Builders Hardware Manufacturers Association:

1. BHMA Directory of Certified Products.

C. National Fire Protection Association:

1. NFPA 80 - Standard for Fire Doors, Fire Windows.
2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.

D. Underwriters Laboratories Inc.:

1. UL 10B - Fire Tests of Door Assemblies.
2. UL 305 - Panic Hardware.
3. UL - Building Materials Directory.

E. Intertek Testing Services (Warnock Hersey Listed):

1. WH - Certification Listings.

1.3 PERFORMANCE REQUIREMENTS

A. Fire Rated Openings: Provide door hardware listed by UL or Intertek Testing Services (Warnock Hersey Listed), or other testing laboratory approved by applicable authorities.

1. Hardware: Tested in accordance with NFPA 252.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings:
1. Indicate locations and mounting heights of each type of hardware, schedules, catalog cuts, electrical characteristics and connection requirements.
2. Submit manufacturer's parts lists, and templates.
3. Submit proposed keying schedule

C. Manufacturer's Installation Instructions: Submit special procedures, and perimeter conditions requiring special attention.

1.5 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Closeout procedures.

B. Operation and Maintenance Data: Submit data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

C. Keys: Deliver with identifying tags to Owner by security shipment direct from hardware supplier.

1.6 QUALITY ASSURANCE

A. Perform Work in accordance with the following requirements:

1. ANSI A156 series.
2. NFPA 80.
3. UL 305.

B. Furnish hardware marked and listed in BHMA Directory of Certified Products.

1.7 QUALIFICATIONS

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

B. Hardware Supplier: Company specializing in supplying commercial door hardware with minimum three years' documented experience. approved by primary hardware manufacturers.

C. Hardware Supplier Personnel: Employ qualified person to assist in work of this section.

D. Products Requiring Electrical Connection: Listed and classified by Underwriters' Laboratories, Inc., as suitable for purpose specified and indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Product storage and handling requirements.

B. Package hardware items individually with necessary fasteners, instructions, and installation templates, when necessary; label and identify each package with door opening code to match hardware schedule.

1.9 COORDINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Coordinate Work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware and recessed items.
1. Provide templates or actual hardware as required to ensure proper preparation of doors and frames.

C. Sequence installation to accommodate required utility connections.

D. Coordinate Owner's keying requirements during course of Work.

1.10 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Product warranties and product bonds.

B. Furnish five year manufacturer warranty for locksets and ten year door closers.

1.11 MAINTENANCE MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Maintenance materials.

B. Furnish special wrenches and tools applicable for each different and for each special hardware component.

C. Furnish maintenance tools and accessories supplied by hardware component manufacturer.

1.12 EXTRA MATERIALS

A. Section 01 70 00 - Execution and Closeout Requirements: Spare parts and maintenance products.

B. Furnish ten extra key lock cylinders for each master keyed group.

PART 2 - PRODUCTS

2.1 DOOR HARDWARE

A. Hinge Manufacturers:
1. Hager.
2. Ives.
3. McKinney.
4. Substitutions: Section 01 60 00 - Product Requirements.

B. Cylinder and Core Manufacturers:
1. Schlage.
a. Substitutions: Section 01 60 00 - Product Requirements Not Permitted.

C. Lock and Latch Set Manufactures:
1. Schlage
2. Substitutions: Section 01 60 00 - Product Requirements Not Permitted.

D. Closers Manufactures:
1. LCN Model 4040 Series.
2. Substitutions: Section 01 60 00 - Product Requirements Not Permitted.

E. Door Controls and Overhead Holders:
1. Manufactures:
a. Glynn Johnson.
b. Substitutions: Section 01 60 00 - Product Requirements Not Permitted.

F. Push/Pulls, Manual Bolts, Protection Plates and Trim:
1. Hager.
2. Ives.
3. McKinney.
4. Substitutions: Section 01 60 00 - Product Requirements.

G. Gaskets, Thresholds, and Trim:
1. National Guard Products.
2. Pemko.
3. Rockwood Manufacturing.
4. Reese.
5. Substitutions: Section 01 60 00 - Product Requirements.

2.2 COMPONENTS

A. General Hardware Requirements: Where not specifically indicated, comply with applicable ANSI A156 standard for type of hardware required. Furnish each type of hardware with accessories as required for applications indicated and for complete, finished, operational doors.
1. Templates: Furnish templates or physical hardware items to door and frame manufacturers sufficiently in advance to avoid delay in Work.
2. Reinforcing Units: Furnished by door and frame manufacturers; coordinated by hardware supplier or hardware manufacturer.
3. Fasteners: Furnish as recommended by hardware manufacturer and as required to secure hardware.
a. Finish: Match hardware item being fastened.

4. Fire Ratings: Provide hardware with UL or Intertek Testing Services (Warnock Hersey Listed) listings for type of application involved.
5. Electrical Devices: Make provisions and coordinate requirements for electrical devices and connections for hardware.

B. Hinges: ANSI A156.1, full mortise type complying with following general requirements unless otherwise scheduled.
1. Widths: Sufficient to clear trim projection when door swings 180 degrees.
2. Number: Furnish minimum three hinges to 90 inches high, four hinges to 120 inches high for each door leaf.

a. Fire Rated Doors To 86 inches High: Minimum three hinges.

3. Size and Weight: 4-1/2 inch heavy weight typical for 1-3/4 inch doors.

a. Doors Over 40 inches Wide: Extra heavy weight ball or oilite bearing hinges.
b. Doors Over 48 inches Wide: 5 inch extra heavy weight ball or oilite bearing.

4. Pins: Furnish nonferrous hinges with non-removable pins (NRP) at exterior and locked outswinging doors, non-rising pins at interior doors.
5. Tips: Flat button tips with matching plug.

C. Locksets: Furnish locksets compatible with specified cylinders. Typical 2-3/4 inch backset. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
1. Mortise Locksets: ANSI A156.13, Series 1000, Grade 1 unless otherwise indicated.
2. Bored (Cylindrical) Locksets: Comply with ANSI/BHMA A156.2, Series 4000, Grade 1.

D. Latch Sets: Match locksets. Typical 2-3/4 inch backset. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames.
   1. Mortise Latch Sets: ANSI A156.13, Series 1000, Grade 1 unless otherwise indicated.
   2. Bored (Cylindrical) Latch Sets: ANSI A156.2, Series 4000, Grade 1 unless otherwise indicated.

E. Exit Devices: ANSI A156.3, Grade 1 rim type, with cross bar, unless otherwise indicated. Furnish standard strikes with extended lips to protect trim from being marred by latch bolt verify type of cutouts provided in metal frames, with floor strikes.
   1. Types: Suitable for doors requiring exit devices.
   2. Coordinators: Furnish overhead type at pairs of doors.
   3. Provide keyed cylinder dogging for all exit devices.

F. Cylinders: ANSI A156.5, Grade 1, 6 pin type removable cylinders interchangeable core type cylinders**.** Match existing building cylinders.
   1. Keying: Key to existing keying system.
   2. Include construction keying.
   3. Keys: Nickel silver. Stamp keys with "DO NOT DUPLICATE".
   4. Supply keys in the following minimum quantities:

      a. 5 master keys.
      b. 3 construction keys.
      c. 3 change keys for each lock biting.

G. Closers: ANSI A156.4 modern type with cover, surface mounted closers; full rack and pinion type with steel spring and non-freezing hydraulic fluid; closers required for fire rated doors unless otherwise indicated.

   1. Adjustability: Furnish controls for regulating closing, latching, speeds, and back checking.
   2. Arms: Type to suit individual condition; parallel-arm closers at reverse bevel doors and where doors swing full 180 degrees.
   3. Location: Mount closers on inside of exterior doors, room side of interior doors typical; mount on pull side of other doors.
   4. Operating Pressure: Maximum operating pressure as follows.

      a. Interior Doors: Maximum 5 pounds.
      b. Exterior Doors: Maximum 8.5 pound.
      c. Fire Rated Doors: As required for fire rating, maximum 15 pounds.

H. Door Controls and Overhead Holders: Furnish with accessories as required for complete operational installation.

   1. Manual Door Holders and Overhead Stops: ANSI A156.8, Grade 1 types as specified
   2. Closer Holder Release Devices: ANSI A156.15 door mounted closer holder release devices closers with single point hold open free swinging release device designed to make swing doors close upon receiving electrical signal.
   3. Electro-Magnetic Door Holder: ANSI A156.15 wall mounted type.
   4. Power Assist Door Operators: ANSI A156.19 power mechanism which reduces opening resistance of self-closing door.

5. Low Energy Power Door Operators: ANSI A156.19 power mechanism which opens and closes door upon receipt of signal.
6. Low Energy Power Open Door Operators: ANSI A156.19 power mechanism which opens self-closing door; closing of door independent of power operator.

I. Push/Pulls, Manual Bolts, Protection Plates, Gaskets, Thresholds, and Trim: Furnish as indicated in Schedule, with accessories as required for complete operational door installations.

1. Push/Pulls: ANSI A156.6; push plates minimum 0.050 inch thick. Furnish as indicated in Schedule, with accessories as required for complete operational door installations.
2. Manual Bolts: ANSI A156.16 Grade 1 top and bottom flush bolts, with dust-proof floor strike, unless otherwise indicated.
3. Kickplates: ANSI A156.6, metal; height indicated in Schedule by 1 inch less than door width; minimum 0.050 inch thick stainless steel, 10” height.
4. Weatherstripping: Furnish continuous weatherstripping at top and sides of exterior doors.
5. Fire Rated Gaskets: Furnish continuous fire rated gaskets at top and sides of fire rated doors.
6. Thresholds: Maximum 1/2 inch height.
7. Wall Stops: ANSI A156.1, Grade 1, 2-1/2 inch wall stop concave pad wall stop with no visible screws.

2.3 ACCESSORIES

A. Lock Trim: Furnish levers with escutcheon plate.
1. Type Tubular, as manufactured by Schlage.
2. Do not permit through bolts on solid wood core doors.

B. Through Bolts: Do not permit through bolts and grommet nuts on door faces in occupied areas unless no alternative is possible.
1. Do not use through bolts on solid wood core doors.

2.4 FINISHING

A. Finishes: ANSI A156.18; furnish following finishes except where otherwise indicated in Schedule at end of section.
1. Hinges:
   a. BHMA 613 Oil Rubbed Bronze
2. Typical Exterior Exposed and High Use Interior Door Hardware:
   a. BHMA 613, oil rubbed satin bronze.
3. Typical Interior Door Hardware:
   a. BHMA 613, oil rubbed satin bronze.
4. Typical Interior Toilet Room Door Hardware:
   a. BHMA 613, oil rubbed satin bronze.
5. Closers: Finish appearance to match door hardware on same face of door.
   a. BHMA 613 oil rubbed bronze.
6. Thresholds: Finish appearance to match door hardware on exterior face of door.
   a. BHMA 613, oil rubbed satin bronze.

7. Other Items: Furnish manufacturer's standard finishes to match similar hardware types on same door, and maintain acceptable finish considering anticipated use and BHMA category of finish.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify doors and frames are ready to receive door hardware and dimensions are as indicated on shop drawings.

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

3.2 INSTALLATION

A. Coordinate mounting heights with door and frame manufacturers. Use templates provided by hardware item manufacturer.

B. Mounting Heights From Finished Floor to Center Line of Hardware Item: Comply with manufacturer recommendations and applicable codes where not otherwise indicated.
1. Locksets: 38 inch.
2. Push/Pulls: 42 inch.
3. Dead Locks: 48 inch.
4. Push Pad Type Exit Devices: 42 inch.
5. Cross Bar Type Exit Devices: 38 inch.
6. Top Hinge: Jamb manufacturer's standard, but not greater than 10 inches from head of frame to center line of hinge.
7. Bottom Hinge: Jamb manufacturer's standard, but not greater than 12-1/2 inches from floor to center line of hinge.
8. Intermediate Hinges: Equally spaced between top and bottom hinges and from each other.
9. Hinge Mortise on Door Leaf: 1/4 inch. to 5/16 inch from stop side of door.

3.3 ADJUSTING

A. Section 01 70 00 - Execution and Closeout Requirements: Testing, adjusting, and balancing.

B. Adjust hardware for smooth operation.

3.4 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

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

3.5 SCHEDULES

A. The following hardware sets are intended to establish type and standard of quality when used together with this section's requirements. Examine Drawings and Specifications and furnish proper hardware for door openings.
   1. Reference hardware sets on Drawing Sheet A602.

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass glazing for metal frames, doors, windows, and glazed walls.
2. Glass glazing materials and installation requirements are included in this section for other sections referencing this section.

B. Related Sections:
1. Section 07 90 00 - Joint Protection: Sealant and back-up material other than glazing sealants.
2. Section 08 13 14 - Standard Steel Doors: Glazed doors.
3. Section 08 14 16 - Flush Wood Doors: Glazed doors.
4. Section 08 41 13 - Aluminum-Framed Entrances and Storefronts.
5. Section 08 87 16 – Safety and Security Window Film.

1.2 REFERENCES

A. American National Standards Institute:
1. ANSI Z97.1 - Safety Glazing Materials Used in Buildings Safety.

B. American Society of Civil Engineers:
1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.

C. ASTM International:

1. ASTM C509 - Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material.
2. ASTM C864 - Standard Specification for Dense Elastomeric Compression Seal Gaskets, Setting Blocks, and Spacers.
3. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
4. ASTM C1036 - Standard Specification for Flat Glass.
5. ASTM C1048 - Standard Specification for Heat-Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
6. ASTM C1172 - Standard Specification for Laminated Architectural Flat Glass.
7. ASTM C1193 - Standard Guide for Use of Joint Sealants.
8. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass.
9. ASTM D635 - Standard Test Method for Rate of Burning and Extent and Time of Burning of Plastics in a Horizontal Position.
10. ASTM D1929 - Standard Test Method for Determining Ignition Temperature of Plastics.

11. ASTM D4802 - Standard Specification for Poly (Methyl Methacrylate) Acrylic Plastic Sheet.
12. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
13. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.
14. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
15. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings.
16. ASTM E1425 - Standard Practice for Determining the Acoustical Performance of Windows, Doors, Skylight, and Glazed Wall Systems.
17. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation.
18. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
19. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.

D. Consumer Products Safety Commission:
   1. CPSC 16 CFR 1201 - Safety Standard for Architectural Glazing.

E. Glass Association of North America:
   1. GANA - Sealant Manual.
   2. GANA - Glazing Manual.
   3. GANA - Laminated Glass Design Guide.

F. National Fenestration Rating Council Incorporated:
   1. NFRC 100 - Procedures for Determining Fenestration Product U-Factors.
   2. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence.
   3. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems.

G. National Fire Protection Association:
   1. NFPA 80 - Standard for Fire Doors, Fire Windows.
   2. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies.
   3. NFPA 257 - Standard on Fire Test for Window and Glass Block Assemblies.

H. South Coast Air Quality Management District:
   1. SCAQMD Rule 1168-January 7, 2005 - Adhesive and Sealant Applications.

I. Underwriters Laboratories Inc.:
   1. UL 10C - Positive Pressure Fire Tests of Door Assemblies.
   2. UL - Building Materials Directory.

1.3 PERFORMANCE REQUIREMENTS

A. Provide glass and glazing materials for continuity of building enclosure and air/vapor barrier:
   1. To utilize inner pane of multiple pane sealed units for continuity of air barrier and vapor retarder seal.
   2. To maintain continuous air barrier and vapor retarder throughout glazed assembly from glass pane to heel bead of glazing sealant.

B. Glass Thickness: Select minimum thickness in accordance with ASTM E1300 to resist specified design loads with the following maximum probability of breakage:
   1. Vertical Glass: 8 lites per 1000 for wind loads with 30 seconds maximum load duration.

C. Structural Design: Design in accordance with Michigan code for most critical combination of wind, snow, seismic, and dead loads.

D. Wind Loads: Design and size glass to withstand positive and negative wind loads acting normal to plane of wall, including increased loads at building corners.

E. Exterior Glass Deflection: Maximum of 1/175 of glass edge length or 3/4 inch, whichever is less with full recovery of glazing materials.

F. Interior Glass Deflection: Maximum differential deflection for two adjacent unsupported edges when 50 plf force is applied to one panel at any point up to 42 inches above finished floor less than thickness of glass.

G. Thermal and Solar Optical Performance: Measured or calculated in accordance with the following:
   1. Maximum U-Values: Comply with ICC IEEC for climate zone in which project is located. Measure in accordance with AAMA 1503.
   2. Maximum SHGC: Comply with ICC IEEC for climate zone in which project is located. Measure in accordance with NFRC 200.
   3. Solar Optical Properties: NFRC 300.

1.4 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Submittal procedures.

B. Shop Drawings:
   1. Indicate sizes, layout, thicknesses, and loading conditions for glass.

C. Product Data:
   1. Glass: Provide structural, physical, and thermal and solar optical performance characteristics, size limitations, special handling or installation requirements.
   2. Glazing Sealants, Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements. Identify available colors where exposed.

D. Design Data:
   1. Submit design calculations for glass thicknesses.

E. Samples:
   1. Glass: Submit sample 8x8 inch in size, illustrating glass units, coloration and design.

F. Manufacturer's Certificate: Certify sealed insulating glass, meets or exceeds specified requirements.

G. Submit Qualifications for safety and security glazing film per Section 08 87 16.

1.5 QUALITY ASSURANCE

A. Perform Work in accordance with GANA Glazing Manual, GANA Sealant Manual, GANA Laminated Glass Design Guide for glazing installation methods.

B. Fire Rated Door Glazing: Tested in accordance with one of the following and complying with NFPA 80.

C. NFPA 257; adjusted so two-thirds of test specimen is above neutral pressure plane at 10 minutes into test.

1.6 QUALIFICATIONS

A. Installer: Company specializing in performing Work of this section with minimum three years documented experience.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Section 01 60 00 - Product Requirements.

B. Do not install glazing when ambient temperature is less than 50 degrees F.

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

1.8 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Product warranties and product bonds.

B. Furnish ten year warranty to include coverage for sealed glass units from seal failure, interpane dusting or misting, and replacement of same.

PART 2 - PRODUCTS

2.1 FLOAT GLASS MATERIALS

A. Annealed Glass: ASTM C1036, Type 1 transparent flat, Quality Q3, float glass.

1. Furnish annealed glass except where heat strengthened or tempered glass is required to meet specified performance requirements.

B. Tempered Glass: ASTM C1048, Type 1 transparent flat, Quality Q3, Kind FT fully tempered, Condition A uncoated, float glass with horizontal tempering.
   1. Furnish tempered glass where heat strengthened glass cannot meet specified performance requirements.
   2. Furnish tempered glass conforming to CPSC 16 CFR 1201at locations where safety glass is required by code.

2.2 FLOAT GLASS PRODUCTS

A. Float Glass
   1. Manufacturers:
      a. PPG Industries.
      b. Old Castle Glass
      c. Viracon
      d. Substitutions: Section 01 60 00 - Product Requirements.

B. Clear Glass: Annealed, and Tempered float glass as specified; Class 1 clear.
   1. Clear annealed glass (FG-CA).
   2. Clear heat strengthened glass (FG-CH).
   3. Clear tempered glass (FG-CT).
   4. Minimum Thickness: 1/4 inch unless otherwise indicated.

C. Tinted Glass: Annealed, and Tempered float glass as specified; Class 2 tinted.
   1. Tinted annealed glass (FG-TA).
   2. Tinted heat strengthened glass (FG-TH).
   3. Tinted tempered glass (FG-TT).
   4. Minimum Thickness: 1/4 inch unless otherwise indicated.
   5. Tint: Gray.

D. Low E Glass: Annealed, and Tempered float glass as specified; Class 2 tinted.
   1. Clear Low E annealed glass (FG-ECA).
   2. Clear Low E heat strengthened glass (FG-ECH).
   3. Clear Low E tempered glass (FG-ECT).
   4. Tinted Low E annealed glass (FG-ETA).
   5. Tinted Low E heat strengthened glass (FG-ETH).
   6. Tinted Low E tempered glass (FG-ETT).
   7. Minimum Thickness: 1/8 inch unless otherwise indicated.
   8. Coating: ASTM C1376; pyrolytic vacuum deposited.

2.3 INSULATING GLASS PRODUCTS

A. Insulating Glass
   1. Manufacturers:
      a. Guardian Industries Corp.
      b. Oldcastle Glass.
      c. PPG Industries.

d. Viracon.
e. Substitutions: Section 01 60 00 - Product Requirements.

B. Insulating Glass: ASTM E2190 certified by Insulating Glass Certification Council and Insulating Glass Manufacturers Alliance; with glass elastomer edge seal; place reflective film within unit; purge interpane space with dry hermetic air.
1. Total Unit Thickness: 1 inch unless otherwise indicated.
2. Insulating Glass Unit Edge Seal Construction: Aluminum, thermally broken, mitered and spigoted corners.
3. Insulating Glass Unit Edge Seal Material: Black color.

C. Double Pane Insulating Glass:
1. Total Unit Thickness: 1 inch unless otherwise indicated.
2. U-Factor Winter: 0.35 maximum.

2.4 GLAZING SEALANTS

A. Elastomeric Glazing Sealants: Materials compatible with adjacent materials including glass, insulating glass seals, and glazing channels.

1. Silicone Glazing Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component; chemical solvent curing; capable of water immersion without loss of properties; non-bleeding, non-staining, cured Shore A hardness of 15 to 25.

2. Polyurethane Glazing Sealant: ASTM C920, Type S, Grade NS, Class and Use suitable for glazing application indicated; single component, chemical curing, non-staining, non-bleeding, Shore A Hardness Range 20 to 35.

B. Dense Gaskets: Resilient extruded shape to suit glazing channel retaining slot; black color.
1. Neoprene: ASTM C864.
2. EPDM: ASTM C864.
3. Silicone: ASTM C1115.

C. Soft Gaskets: ASTM C509; resilient extruded shape to suit glazing channel retaining slot; black.
1. Neoprene.
2. EPDM.

D. Pre-Formed Glazing Tape: Size to suit application.
1. Preformed butyl compound with integral resilient tube spacing device; 10 to 15 Shore A durometer hardness; coiled on release paper; black color.
a. Butyl Corner Sealant: ASTM C920 single component non-skinning butyl compatible with glazing tape; color to match tape.
2. Interior Sealants and Sealant Primers: Maximum volatile organic compound content in accordance with SCAQMD Rule 1 168.

E. Structural Sealant: High ultimate tensile strength.

2.5 GLAZING ACCESSORIES

A. Setting Blocks: Elastomeric material recommended by glass manufacturer, 80 to 90 Shore A durometer hardness, 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: Elastomeric material recommended by glass manufacturer, 50 to 60 Shore A durometer hardness, minimum 3 inch long x one half the height of glazing stop x thickness to suit application, self adhesive on one face.

C. Glazing Clips: Manufacturer's standard type.

D. Safety and Security Film per Section 08 87 16.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 30 00 - Administrative Requirements: Coordination and project conditions.

B. Verify openings for glazing are correctly sized and within acceptable tolerance.

C. Verify surfaces of glazing channels or recesses are clean, free of obstructions impeding moisture movement, weeps are clear, and ready to receive glazing.

3.2 PREPARATION

A. Clean contact surfaces with solvent and wipe dry.

B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.

C. Prime surfaces scheduled to receive sealant.

3.3 INSTALLATION

A. Perform installation in accordance with GANA Glazing Manual.
   1. Glazing Sealants: Comply with ASTM C1193.
   2. Fire Rated Openings: Comply with NFPA 80.

B. Exterior Wet/Dry Method (Preformed Tape and Sealant) Installation:
   1. Cut glazing tape to length and set against permanent stops, 3/16 inch below sight line. Seal corners by butting tape and dabbing with compatible butyl sealant.
   2. Apply heel bead of butyl sealant along intersection of permanent stop with frame ensuring full perimeter seal between glass and frame to complete continuity of air and vapor seal.
   3. Place setting blocks at 1/3 points with edge block no more than 6 inches from corners.

4. Rest glazing on setting blocks and push against tape with sufficient pressure to attain full contact at perimeter of pane or glass unit.
5. Install removable stops, with spacer strips inserted between glazing and applied stops, 1/4 inch below sight line. Place glazing tape on glazing pane or unit with tape flush with 1/4 inch below sight line.
6. Fill gap between glazing and stop with elastomeric glazing sealant to depth equal to bite of frame on glazing, but not more than 3/8 inch below sight line.
7. Apply cap bead of elastomeric glazing sealant along void between stop and glazing, to uniform line, flush with sight line. Tool or wipe sealant surface smooth.

C. Interior Dry Method (Tape and Tape) Installation:
1. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
2. Place setting blocks at 1/3 points with edge block no more than 6 inches from corners.
3. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
4. Place glazing tape on free perimeter of glazing in same manner described above.
5. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
6. Knife trim protruding tape.

3.4 INSTALLATION

A. Film Installation:
1. Install per Section 08 87 16.
2. Install in accordance with manufacturer's instructions.
3. Cut film edges neatly and square at a uniform distance of 1/8 inch to 1/16 inch of window sealant. Use new blade tips after 3 to 4 cuts.
4. Spray the slip solution, composed of one capful of baby shampoo or dishwashing liquid to 1 gallon of water, on window glass and adhesive to facilitate proper positioning of film.
5. Apply film to glass and lightly spray film with slip solution.
6. Squeegee from top to bottom of window. Spray slip solution to film and squeegee a second time.
7. Bump film edge with lint-free towel wrapped around edge of a 5-way tool.
8. Upon completion of film application, allow 30 days for moisture from film installation to dry thoroughly, and to allow film to dry flat with no moisture dimples when viewed under normal viewing conditions.

3.5 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Final cleaning.

B. Remove glazing materials from finish surfaces.

C. Remove labels after Work is complete.

D. Clean glass and adjacent surfaces.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Section 01 70 00 - Execution and Closeout Requirements: Protecting installed construction.

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

END OF SECTION

SECTION 08 87 16
SAFETY AND SECURITY WINDOW FILM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Safety and security window film.

B. Film attachment systems.

1.2 REFERENCES

A. ASHRAE - American Society for Heating, Refrigeration, and Air Conditioning Engineers; Handbook of Fundamentals.

B. ASTM International (ASTM):
1. ASTM D882 - Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
2. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers - Tension.
3. ASTM D624 - Standard Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
4. ASTM D1004 - Standard Test Method for Tear Resistance (Graves Tear) of Plastic Film and Sheeting.
5. ASTM D1044 - Standard Method of Test for Resistance of Transparent Plastics to Surface Abrasion (Taber Abrader Test).
6. ASTM D2240 - Standard Method for Rubber Property - Durometer Hardness.
7. ASTM D2582 - Standard Test Method for Puncture-Propagation Tear Resistance of Plastic Film and Thin Sheeting.
8. ASTM D5895 - Standard Test Methods for Evaluating Drying or Curing During Film Formation of Organic Coatings Using Mechanical Recorders.
9. ASTM D4830 - Standard Test Methods for Characterizing Thermoplastic Fabrics Used in Roofing and Waterproofing.
10. ASTM E84 - Standard Method of Test for Surface Burning Characteristics of Building Materials.
11. ASTM E903 - Standard Methods of Test for Solar Absorbance, Reflectance and Transmittance of Materials Using Integrating Spheres.
12. ASTM E1886 - Standard Test Method for Performance of Exterior Windows, Curtain Walls, Doors, and Impact Protective Systems Impacted by Missile(s) and Exposed to Cyclic Pressure Differentials.
13. ASTM E1996 - Standard Specification for Performance of Exterior Windows, Curtain Walls, Doors and Impact Protective Systems Impacted by Windborne Debris in Hurricanes.
14. ASTM F1642 - Standard Method of Test for Glazing and Glazing Systems Subject to Airblast Loadings.
15. ASTM F2912 - Standard Specification for Glazing and Glazing Systems Subject to Airblast Loadings.

C. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test.

D. Consumer Products Safety Commission 16 CFR, Part 1201 - Safety Standard for

Architectural Glazing Materials.

E. GSA-TS01-2003 -- Standard Test for Glazing and Glazing Systems Subject to Airblast Loadings.

F. ISO 16933, International Standard for Glass in Building: Explosion-resistant security glazing - Test and classification for arena air-blast testing.

G. Underwriters Laboratories Inc. (UL): UL 972 - Burglary Resisting Glazing Material.

1.3 PERFORMANCE REQUIREMENTS

A. Safety Glazing Impact Performance:
1. 400 ft-lbs impact resistance, meeting ANSI Z97.1 (Class A, Unlimited) and 16 CFR 1201 (Category 2) impact requirements with film applied on 1/4 inch annealed glass.
2. Impact Resistance after Aging: 400 ft-lbs, meeting ANSI Z97.1 (Class A, Unlimited) and 16 CFR 1201 (Category 2) impact requirements with film applied on 1/8 inch annealed glass.
3. 400 ft-lbs impact resistance, meeting 16 CFR 1201 (Category 2) impact requirements with film applied on 1/4 inch annealed glass.
4. 150 ft-lbs impact resistance, meeting ANSI Z97.1 (Class B, Unlimited) and 16 CFR 1201 (Category 1) impact requirements with film applied on 1/4 inch annealed glass
5. 400 ft-lbs impact resistance, meeting ANSI Z97.1 (Class A, Unlimited) or 16 CFR 1201 (Category 2) impact requirements with film applied on 1/4 inch annealed glass
6. 150 ft-lbs impact resistance, meeting ANSI Z97.1 (Class B, Unlimited) and 16 CFR 1201 (Category 1) impact requirements with film applied on 1/4 inch annealed glass
7. 400 ft-lbs impact resistance, meeting ANSI Z97.1 (Class A, Unlimited) and 16 CFR 1201 (Category 2) impact requirements with film is applied on 1/4 inch annealed glass

B. Blast Hazard Mitigation Performance:
1. GSA Rating of "2"/ ASTM F1642 "No Hazard" with minimum blast load of 7 psi and 43 psi*msec, on 1/4 inch (6 mm) single pane glass and film attachment system.
2. GSA Rating of "2" / ASTM F1642 "Minimal Hazard" with minimum blast load of 9 psi and 60 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.
3. GSA Rating of "3B" / ASTM F1642 "Very Low Hazard" with minimum blast load of 5 psi and 28 psi*msec, on 1/4" single pane glass without film attachment system.
4. GSA Rating of "3B" / ASTM F1642 "Low Hazard" with minimum blast load of 11 psi and 65 psi*msec, on 1 inch (25 mm) double pane glass without film attachment system.
5. GSA Rating of "2"/ ASTM F1642 "No Hazard" with minimum blast load of 9 psi and 63 psi*msec, on1/4" single pane glass and film attachment system.
6. GSA Rating of "2" / ASTM F1642 "Minimal Hazard" with minimum blast load of 10 psi and 89 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.
7. GSA Rating of "3B" / ASTM F1642 "Very Low Hazard" with minimum blast load of 5 psi and 28 psi*msec, on 1/4" pane glass without film attachment system.
8. GSA Rating of "3B" / ASTM F1642 "Low Hazard" with blast minimum load of 10 psi and 42 psi*msec, on 1 inch (25 mm) double pane glass without film attachment system.
9. GSA Rating of "2" / ASTM F1642 "No Hazard" with minimum blast load of 6 psi and 45 psi*msec, on 1/4 inch (6 mm) single pane glass and film attachment system.

10. GSA Rating of "2" / ASTM F1642 "No Hazard" with minimum blast load of 9 psi and 60 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.
11. GSA Rating of "3B" with minimum blast load of 4 psi and 28 psi*msec, on 1/4 inch (6 mm) single pane glass and film attachment system.
12. GSA Rating of "3B" with minimum blast load of 10 psi and 89 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.
13. GSA Rating of "3B" / ASTM F1642 "Minimal Hazard" with minimum blast load of 6 psi and 41 psi*msec, on 1/4 inch (6 mm) single pane glass and film attachment system.
14. GSA Rating of "2" with minimum blast load of 12 psi and 66 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.
15. GSA Rating of "3B" with minimum blast load of 4 psi and 29 psi*msec, on 1/4 inch (6 mm) pane glass without film attachment system.
16. GSA Rating of "3B" with minimum blast load of 8 psi and 44 psi*msec, on 1/4 inch (6 mm) single pane glass and film attachment system.
17. GSA Rating of "3B" with minimum blast load of 15 psi and 59 psi*msec, on 1 inch (25 mm) double pane glass without film attachment system.
18. GSA Rating of "2" / ASTM F1642 "No Hazard" with minimum blast load of 5 psi and 32 psi*msec, on 1/4 inch (6 mm) single pane glass and film attachment system.
19. GSA Rating of "2" / ASTM F1642 "No Hazard" with minimum blast load of 5 psi and 30 psi*msec, on 1 inch (25 mm) double pane glass and film attachment system.

C. Impact Resistance and Pressure Cycling:
1. ASTM E1996 / E1886: Small Missile "A", +/- 80 psf Design Pressure.
2. ASTM E1996 / E1886: Large Missile "C", +/- 75 psf Design Pressure
3. ASTM E1996 / E1886: Small Missile "A", +/- 70 psf Design Pressure
4. ASTM E1996 / E1886: Small Missile "A", +/- 60 psf Design Pressure
5. ASTM E1996 / E1886: Large Missile "C", +/- 60 psf Design Pressure

D. Tear Resistance:
1. Minimum Graves Area Tear Strength of 1,000 lbs% as measured on coated film product, without liner, per ASTM D1004.
2. Minimum Graves Area Tear Strength of 1,200 lbs% as measured on coated film product, without liner, per ASTM D1004.
3. Minimum Graves Area Tear Strength of 1,100 lbs% as measured on coated film product, without liner, per ASTM D1004

E. Adhesion to Glass:
1. Minimum 8 lbs/in peel strength per ASTM D3330 (Method A).
2. Minimum 6 lbs/in peel strength per ASTM D3330 (Method A).
3. Minimum 6 lbs/in peel strength per ASTM D3330 (Method A).
4. Nominal 4 lbs/in peel strength per ASTM D3330 (Method A).
5. Nominal 5 lbs/in peel strength per ASTM D3330 (Method A).
6. Minimum 2 lbs/in peel strength per ASTM D3330 (Method A).
7. Nominal 4 lbs/in peel strength per ASTM D3330 (Method A).
8. Nominal 4 lbs/in peel strength per ASTM D3330 (Method A).
9. Nominal 5 lbs/in peel strength per ASTM D3330 (Method A).
10. Minimum 3 lbs/in peel strength per ASTM D3330 (Method A).
11. Nominal 1 lbs/in peel strength per ASTM D3330 (Method A).

F. Flammability: Surface burning characteristics when tested in accordance ASTM E 84, demonstrating film applied to glass rated Class A for Interior Use:

1. Flame Spread Index: no greater than 25.
2. Smoke Developed Index: no greater than 55.

G. Abrasion Resistance:
1. Film shall have a surface coating that is resistant to abrasion such that less than 3 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.
2. Film shall have a surface coating that is resistant to abrasion such that less than 3 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.
3. Film shall have a surface coating that is resistant to abrasion such that less than 5 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.
4. Film shall have a surface coating that is resistant to abrasion such that a nominal 5 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.
5. Film shall have a surface coating that is resistant to abrasion such that a nominal 3 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.
6. Film shall have a surface coating that is resistant to abrasion such that less than 2 percent increase of transmitted light haze will result when tested in accordance to ASTM D 1044 using 100 cycles, 500 grams weight, and the CS10F Calibrase Wheel.

H. UV Light Rejection:
1. Minimum of 99.9% UV light rejection (300 - 380 nm), per ASTM E903, as determined with film applied on 1/4 inch clear glass.
2. Minimum of 99.9% UV light rejection (300 - 380 nm), per ASTM E903, as determined with film applied on 1/4 inch clear glass.
3. Minimum of 99% UV light rejection (300 - 380 nm), per ASTM E903, as determined with film applied on 1/4 inch clear glass.
4. Minimum of 99.9% UV light rejection (300 - 380 nm), per ASTM E903, as determined with film applied on 1/4 inch clear glass.
5. Minimum of 99% UV light rejection (300 - 380 nm), per ASTM E903, as determined with film applied on 1/4 inch clear glass

1.4 SUBMITTALS

A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

B. Product Data: Manufacturer's current technical literature on each product to be used, including:
1. Manufacturer's Data Sheets.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Installation methods.

C. Verification Samples: For each film specified, two samples representing actual film color and pattern.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: All primary products specified in this section shall be supplied

by a single manufacturer with a minimum of ten years' experience.

1. Provide documentation that the adhesive used on the specified film is a Pressure Sensitive Adhesive (PSA).

B. Installer Qualifications: All products listed in this section shall be installed by a single installer with demonstrated experience in installing products of the same type and scope as specified.

1. Installer shall be certified by manufacturer to have the required training for installation of this product.
2. Provide documentation that the installer is authorized by the Manufacturer to perform Work specified in this section.
3. Provide a commercial building reference list of properties where the installer has applied window film. This list will include the following information:
   a. Name of building.
   b. The name and telephone number of a management contact.
   c. Type of glass.
   d. Type of film and/or film attachment system.
   e. Amount of film and/or film attachment system installed.
   f. Date of completion.

C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.

1. Finish areas designated by Architect.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Follow Manufacturer's instructions for storage and handling.

B. Store products in manufacturer's unopened packaging until ready for installation.

C. Store and dispose of any hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT 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 recommended limits.

1.8 WARRANTY

A. At project closeout, provide to Owner's Representative an executed current copy of the manufacturer's standard limited warranty against manufacturing defect, outlining its terms, conditions, and exclusions from coverage.

B. In order to validate warranty, installation must be performed by an Authorized 3M dealer. Verification of Authorized 3M dealer can be confirmed by submission of active 3M dealer code number.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: 3M Commercial Solutions, which is located at: 3M Center Bldg. 220-12-E-04; St. Paul, MN 55144-1000; Toll Free Tel: 888-650-3497; Tel: 651-737-1081; Fax: 651 737 8241; Email: request info (tdjohnson3@mmm.com).

B. Manufacturer: Armoured One 23 mil. Contact andrew@armouredone.com, (315) 720-4186.

C. Substitutions: per Section 01 60 00.

2.2 CLEAR MICROLAYERED SAFETY AND SECURITY WINDOW FILM

A. 3M Scotchshield Ultra S800 Safety and Security Window Film. Optically clear microlayered polyester film, nominally 8 mils (0.008 inch) thick, with a durable acrylic abrasion resistant coating over one surface and a pressure sensitive adhesive on the other. The film is clear and does not contain dyed polyester. The adhesive is pressure-activated, not water-activated, and forms a physical bond, not chemical bond, to the glass. The film is microlayered with both plastic and ductile polyester layers for tear resistance.
   1. Physical / Mechanical Performance Properties (nominal):
      a. Film Color: Clear.
      b. Film Thickness (excluding coatings or adhesive liner): Nominal 8 mils
      c. Tensile Strength (ASTM D882):
         1) Base Film: 32,000 psi (MD) / 32,000 psi (TD).
         2) Coated Film: 32,000 psi (MD) / 32,000 psi (TD).
      d. Break Strength (ASTM D882):
         1) Base Film: 250 lb/in (MD) / 250 lb/in (TD).
         2) Coated Film: 245 lb/in (MD) / 265 lb/in (TD).
      e. Percent Elongation at Break (ASTM D882):
         1) Base Film: 115 % (MD) / 115 % (TD).
         2) Coated Film: 132 % (MD) / 130 % (TD).
      f. Yield Strength:
         1) Base Film: 12,000 psi (MD).
         2) Coated Film: 15,000 psi (MD).
      g. Percent Elongation at Yield (ASTM D882):
         1) Base Film: 7% (MD).
         2) Coated Film: 9% (MD).
      h. Graves Tear Resistance (ASTM D1004):
         1) Maximum Force (lbs):
            a) Base Film: 40 (MD) / 40 (TD).
            b) Coated Film: 40 (MD) / 40 (TD).
         2) Maximum Extension (in):
            a) Base Film: 0.45 (MD) / 0.65 (TD).
            b) Coated Film: 0.50 (MD) / 0.57 (TD).
         3) Graves Area Tear Resistance (lbs%):
            a) Base Film: 1,100 (MD) / 1,300 (TD).
            b) Coated Film: 1,100 (MD) / 1,300 (TD).
      i. Puncture Propagation Tear Resistance (ASTM D2582):
         1) Coated Film: 9 lbf (MD) / 10 lbf (TD).
      j. Puncture Strength (ASTM D4830):
         1) Material Properties (as supplied).
         2) Coated Film: 185 lbf.
   2. Uniformity: No noticeable pin holes, streaks, thin spots, scratches, banding or other

optical defects.

3. Variation in Total Transmission across the width: Less than 2 percent over the average at any portion along the length.
4. Identification: Labeled as to Manufacturer as listed in this Section.
5. Solar Performance Properties: Film applied to 1/4 inch (6 mm) thick clear glass.
   a. Visible Light Transmission (ASTM E 903): 87 percent.
   b. Visible Reflection (ASTM E 903): Not more than 10 percent.
   c. Ultraviolet Transmission (ASTM E 903): Less than 0.5 percent.
   d. Solar Heat Gain Coefficient (ASTM E 903): 0.79
6. Impact Resistance for Safety Glazing: Tested on 1/4 inch (6 mm) annealed glass.
   a. Safety Rating (CPSC 16 CFR, Part 1201): Category II (400 ft.-lbs).
   b. Safety Rating (ANSI Z97.1): Class A, Unlimited Size.
7. Impact Resistance and Pressure Cycling: Film shall pass impact of Large Missile "C" and withstand subsequent pressure cycling (per ASTMs E1996 and E1886) at +/ 75 psf Design Pressure with use of 3M Impact Protection Adhesive. Film applied to 1/4-inch tempered glass.
8. Blast Hazard Mitigation:
   a. GSA Rating of "2" / ASTM F1642 "Minimal Hazard" with blast pressure of 7 psi and 44 psi*msec blast impulse, on 1/4 inch (6 mm) annealed single pane glass and 3M Impact Protection Profile Attachment system
   b. GSA Rating of "2"/ ASTM F1642 "Minimal Hazard" with blast pressure of 7 psi and 43 psi*msec blast impulse, on 1/4 inch (6 mm) tempered single pane glass and 3M Impact Protection Profile Attachment system
   c. GSA Rating of "2" / ASTM F1642 "Minimal Hazard" with blast pressure of 9 psi and 62 psi*msec blast impulse, on 1/4 inch (6 mm) annealed single pane glass and 3M Impact Protection Adhesive Attachment system
   d. GSA Rating of "2" / ASTM F1642 "No Hazard" with blast pressure of 9 psi and 63 psi*msec blast impulse, on 1/4 inch (6 mm) tempered single pane glass and 3M Impact Protection Adhesive Attachment system
   e. GSA Rating of "2" / ASTM F1642 "Minimal Hazard" with blast pressure of 9 psi and 60 psi*msec blast impulse, on 1 inch (25 mm) annealed double pane glass and 3M Impact Protection Profile Attachment system
   f. GSA Rating of "2" / ASTM F1642 "Minimal Hazard" with blast pressure of 10 psi and 89 psi*msec blast impulse, on 1 inch (25 mm) annealed double pane glass and 3M Impact Protection Adhesive Attachment system
   g. GSA Rating of "3B" / ASTM F1642 "Very Low Hazard" with blast pressure of 4 psi and 28 psi*msec blast impulse, on 1/4 inch (6 mm) annealed single pane glass, daylight applied film (no attachment)
   h. GSA Rating of "3B" / ASTM F1642 "Very Low Hazard" with blast pressure of 4 psi and 28 psi*msec blast impulse, on 1/4 inch (6 mm) tempered single pane glass, daylight applied film (no attachment)
   i. GSA Rating of "3B" / ASTM F1642 "Low Hazard" with blast pressure of 7 psi and 42 psi*msec blast impulse, on 1 inch (25 mm) annealed double pane glass, daylight applied film (no attachment)
9. Forced Entry Resistance: Product shall have been evaluated for time to resist complete body passage by a qualified 3rd Party test lab.

PART 3 EXECUTION

3.1 EXAMINATION

A. Film Examination:
   1. If preparation of glass surfaces is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.
   2. Glass surfaces receiving new film should first be examined to verify that they are free from defects and imperfections, which will affect the final appearance.
   3. Do not proceed with installation until glass surfaces have been properly prepared and deviations from manufacturer's recommended tolerances are corrected. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result under the project conditions.
   4. Commencement of installation constitutes acceptance of conditions.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Refer to Manufacturer's installation instructions for methods of preparation for Impact Protection Adhesive or Impact Protection Profile film attachment systems.

3.3 INSTALLATION

A. Film Installation with Structural Silicone Dow 995:
   1. Install in accordance with manufacturer's instructions.
   2. Cut film edges neatly and square at a uniform distance of 1/8 inch (3 mm) to 1/16 inch (1.5 mm) of window sealant. Use new blade tips after 3 to 4 cuts.
   3. Spray the slip solution, composed of one capful of baby shampoo or dishwashing liquid to 1 gallon of water, on window glass and adhesive to facilitate proper positioning of film.
   4. Apply film to glass and lightly spray film with slip solution.
   5. Squeegee from top to bottom of window. Spray slip solution to film and squeegee a second time.
   6. Bump film edge with lint-free towel wrapped around edge of a 5-way tool.
   7. Upon completion of film application, allow 30 days for moisture from film installation to dry thoroughly, and to allow film to dry flat with no moisture dimples when viewed under normal viewing conditions.

3.4 CLEANING AND PROTECTION

A. Remove left over material and debris from Work area. Use necessary means to protect film before, during, and after installation.

B. Touch-up, repair or replace damaged products before Substantial Completion.

C. After application of film, wash film using common window cleaning solutions, including ammonia solutions, 30 days after application. Do not use abrasive type cleaning agents and bristle brushes to avoid scratching film. Use synthetic sponges or soft cloths.

END OF SECTION

SECTION 09 68 13

TILE CARPETING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
1. Carpet tile, tab installation.
2. Accessories.

1.2 REFERENCE STANDARDS

A. ASTM International:
1. ASTM D2859 - Standard Specification for Ignition Characteristics of Finished Textile Floor Covering Materials.

B. California Department of Health Services:
1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.

C. Carpet and Rug Institute:
1. CRI Carpet Installation Standard - Standard for Installation of Commercial Carpet.
2. CRI Green Label Plus Testing Program.
3. CRI Model Specifications for Commercial Carpets.

D. Consumer Products Safety Commission:
1. CPSC 16 CFR 1630 - Standard for the Surface Flammability of Carpets and Rugs.

E. National Fire Protection Association:
1. NFPA 253 - Standard Method of Test for Critical Radiant Flux for Floor Covering Systems Using a Radiant Heat Energy Source.

F. South Coast Air Quality Management District:
1. SCAQMD Rule 1168-January 7, 2005 - Adhesive and Sealant Applications.

1.3 SUBMITTALS

A. Product Data: Submit data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.

B. Samples:
1. Submit sample board of all color options, approximately 6”x6” samples.
2. To verify color selection, submit one full-sized carpet tile and one 6”x6” piece for each carpet color selected, illustrating color and pattern design.

C. Manufacturer's Instructions: Submit special procedures, perimeter conditions requiring special attention.

1.4 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: Submit maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Extra Stock Materials:
1. Furnish remaining box of carpet tiles of each color and pattern selected.

1.6 QUALITY ASSURANCE

A. Surface Burning Characteristics:
1. Floor Finishes: Comply with one of the following:
a. Class I, minimum 0.45 watts/sq cm when tested in accordance with NFPA 253.
b. CPSC 16 CFR 1630 and ASTM D 2859.

B. Texture Appearance Retention Rating: Rating classifications as determined by CRI Model Specifications for Commercial Carpets.
1. Greater than or equal to 2.5 TARR for Moderate Traffic Level Classification.

1.7 QUALIFICATIONS

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

B. Installer: Company specializing in performing work of this section with minimum 3 years documented experience.

1.8 AMBIENT CONDITIONS

A. Store materials in area of installation for 48 hours prior to installation.

PART 2 - PRODUCTS

2.1 CARPET TILE

A. Manufacturers:
1. Mohawk Industries.
2. Mannington.
3. J & J.
4. Substitutions: Section 016000 – Product Requirements.

2.2 COMPONENTS

A. Reference Room Schedule on Drawing Sheet A601 for locations.

B. Carpet Tile Type (CPT-1): Tufted, manufactured in one color dye lot; conforming to the following criteria: (Basis for design; Mohawk Industries Commercial Carpet
1. Pattern: to be determined by Owner from manufacturer's standard patterns.
2. Tile Size: 12x36 inch, tile.
3. Construction: to be determined by Owner from manufacturer's standard colors.
4. Max. Electrostatic Charge: less than 3.5kV
5. Gage: 1/12 inch.
6. Surface Appearance: Level Heathered Loop
7. Dye method: Solution Dyed
8. Fiber Type: Duracolor Tricor Premium Nylon
9. Installation Method: See Installation Guide, Mohawk Industries age 03 at end of this specification section – tab installation guideline
10. Flammability: ASTM E648, Class 1 (Glue Down)
11. Smoke Density: ASTM E662 Less than 450
12. Warranties: Lifetime Limited Carpet Tile Warranty, Lifetime Limited Duracolor Stain Warranty, Lifetime Static.

2.3 ACCESSORIES

A. Vinyl Base: ASTM F1861 (VB) Type TV - Vinyl; coved style:
1. Height: 4 inch.
2. Thickness: 0.11 inch thick.
3. Finish: Satin.
4. Color: to be determined from manufacturer's standard colors.

B. Sub-Floor Filler: Cementitious latex Type recommended by flooring material manufacturer.

C. Moldings and Edge Strips: Vinyl, color, as selected from manufacturer standard.

D. Contact Adhesive: Compatible with carpet material Recommended by carpet manufacturer releasable type.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify floor surfaces are smooth and flat within tolerances specified in Sections 03 35 00 concrete Finishing and Section 03 39 00 Concrete Finishing and are ready to receive work.

3.2 PREPARATION

A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.

B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.

C. Clean substrate.

3.3 INSTALLATION – CARPET TILE

A. Install carpet tile in accordance with CRI Carpet Installation Standard and Installation Guide at end of this specification.

B. Do not mix carpet from different cartons unless from same dye lot.

C. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.

D. Install carpet tile in pattern, with pile direction alternating to next unit, set parallel to room length (see Installation Guide).

E. Locate change of color or pattern between rooms under door centerline and as indicated on Installation Guide.

F. Install carpet tile with tab installation, see installation guide at end of this section.

G. Adhere carpet tile adhesive as recommended by manufacturer onto clean and dry substrate.

H. Trim carpet tile neatly at walls and around interruptions.

I. Complete installation of edge strips, concealing exposed edges.

3.4 INSTALLATION - BASE

A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.

B. Miter internal corners. At external corners, use premolded units. At exposed ends, use premolded units.

C. Install base on solid backing. Bond tightly to wall and floor surfaces.

D. Scribe and fit to door frames and other interruptions.

3.5 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09 90 00

PAINTING AND COATING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Surface preparation and field application of paints, stains, varnishes, and other coatings.

B. Related Requirements:

1. Section 05 50 00 - Metal Fabrications: Shop-primed items.
2. Section 09 96 00 - High-Performance Coatings: Paints and coatings with better scrubbability and durability than normal or with increased protection from corrosion.
3. Section 22 05 53 - Identification for Plumbing Piping and Equipment: Stenciling, color-coding, and identification banding.
4. Section 23 05 53 - Identification for HVAC Piping and Equipment: Stenciling, color-coding, and identification banding.
5. Section 26 05 53 - Identification for Electrical Systems: Stenciling, color-coding, and identification banding.
6. Section 27 05 53 - Identification for Communications Systems: Stenciling, color-coding, and identification banding.
7. Section 32 12 16 - Pavement markings.

1.2 DEFINITIONS

A. Refer to ASTM D16 for definitions of terms used in this Section.

1.3 REFERENCE STANDARDS

A. ASTM International:

1. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.
2. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
3. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

B. California Department of Public Health:

1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.

C. Green Seal:

1. GS-03 - Anti-Corrosive Paints.
2. GS-11 - Paints and Coatings.

D. Master Painters Institute:

1. MPI - Approved Products List.
2. MPI - Architectural Painting Manual.

E. South Coast Air Quality Management District:

1. SCAQMD Rule 1113 - Architectural Coatings.

1.4 PREINSTALLATION MEETINGS

A. Section 01 30 00 - Administrative Requirements: Requirements for preinstallation meeting.

B. Convene minimum one week prior to commencing Work of this Section.

1.5 SEQUENCING

A. Section 01 10 00 - Summary: Requirements for sequencing.

B. Do not apply finish coats until paintable sealant is applied.

C. Back prime wood trim before installation of trim.

1.6 SUBMITTALS

A. Section 01 33 00 - Submittal Procedures: Requirements for submittals.

B. Product Data:

1. Submit manufacturer data on finishing products and special coatings.
2. Include MPI - Approved Products Lists with proposed products highlighted.

C. Samples:

1. Submit two paper chip samples, 4 by 4 inches in size, illustrating range of colors and textures available for each surface finishing product as scheduled.

1.7 CLOSEOUT SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for submittals.

B. Operation and Maintenance Data: Submit information on cleaning, touchup, and repair of painted and coated surfaces.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for maintenance materials.

B. Extra Stock Materials:

1. Furnish 1 remaining gal. of each color, type, and surface texture as provided for Project.
2. Label each container with manufacturer's label, color, type, texture, room number, and Site location.
3. Store where directed by Owner.

1.9 QUALITY ASSURANCE

A. MPI Standards:

1. Comply with indicated MPI standards.
2. Products: Listed in MPI - Approved Products List.

B. Surface Burning Characteristics:

1. Fire-Retardant Finishes: Maximum 25/450 flame-spread/smoke-developed index when tested according to ASTM E84.

1.10 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

B. Applicator: Company specializing in performing Work of this Section with minimum three years' documented experience.

1.11 DELIVERY, STORAGE, AND HANDLING

A. Section 01 60 00 - Product Requirements: Requirements for transporting, handling, storing, and protecting products.

B. Container Labeling: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Inspection:

1. Accept materials on Site in manufacturer's sealed and labeled containers.
2. Inspect for damage and to verify acceptability.

D. Store materials in ventilated area and otherwise according to manufacturer instructions.

E. Protection:

1. Protect materials from moisture and dust by storing in clean, dry location remote from construction operations areas.
2. Provide additional protection according to manufacturer instructions.

1.12 AMBIENT CONDITIONS

A. Section 01 50 00 - Temporary Facilities and Controls: Requirements for ambient condition control facilities for product storage and installation.

B. Storage Conditions:

1. Minimum Ambient Temperature: 45 degrees F.
2. Maximum Ambient Temperature: 90 degrees F

C. Application Conditions:

1. Do not apply materials when surface and ambient temperatures are outside temperature ranges required by paint manufacturer.
2. Do not apply exterior coatings during rain or snow, when relative humidity is outside humidity ranges, or when moisture content of surfaces exceeds those required by paint manufacturer.
3. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors and 50 degrees F for exteriors, unless otherwise indicated by manufacturer instructions.
4. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interiors and exteriors, unless otherwise indicated by manufacturer instructions.
5. Lighting Level: 80 fc measured mid-height at substrate surface.

1.13 WARRANTY

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for warranties.

B. Furnish five-year manufacturer's warranty for paint and coatings.

PART 2 - PRODUCTS

2.1 PAINTS AND COATINGS

A. Manufacturers:
1. Sherwin Williams (Basis for design)
2. Benjamin Moore
3. Pittsburgh Paint.
4. Substitutions: As specified in Section 01 60 00 - Product Requirements.

B. Materials:

1. Coatings:

a. Ready mixed, except field-catalyzed coatings.

b. Capable of drying or curing free of streaks or sags.

2. Patching Materials: Latex filler.
3. Fastener Head Cover Materials: Latex filler.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for application examination.

B. Verify that surfaces and substrate conditions are ready to receive Work as recommended by product manufacturer.

C. Examine surfaces scheduled to be finished prior to commencement of Work, and report conditions capable of affecting proper application to Architect/Engineer.

D. Test shop-applied primer for compatibility with subsequent cover materials.

E. Moisture Content:

1. Measure moisture content of surfaces using electronic moisture meter.
2. Do not apply finishes unless moisture content of surfaces are below following maximums:

a. Plaster and Gypsum Wallboard: 12 percent.
b. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
c. Interior Wood: 15 percent, measured according to ASTM D4442.
d. Exterior Wood: 15 percent, measured according to ASTM D4442.
e. Concrete Floors: 8 percent.

3.2 PREPARATION

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for application preparation.

B. Prepare coatings as follows:

1. To soft paste consistency, capable of being readily and uniformly dispersed to homogeneous coating.
2. For smooth flow and brushing properties.

C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.

D. Defects:

1. Correct defects and clean surfaces capable of affecting Work of this Section.

2. Remove or repair existing coatings exhibiting surface defects.

E. Marks: Seal marks that may bleed through surface finishes with shellac.

F. Impervious Surfaces:

1. Remove mildew by scrubbing with solution of tetra-sodium or tri-sodium phosphate and bleach.
2. Rinse with clean water and allow surface to dry.

G. Aluminum Surfaces Scheduled for Paint Finish:

1. Remove surface contamination by steam or high-pressure water.
2. Remove oxidation with acid etch and solvent washing.
3. Apply etching primer immediately following cleaning.

H. Asphalt, Creosote, or Bituminous Surfaces Scheduled for Paint Finish:

1. Remove foreign particles to permit adhesion of finishing materials.
2. Apply latex-based compatible sealer or primer.

I. Insulated Coverings: Remove dirt, grease, and oil from canvas and cotton.

J. Concrete Floors (new):
1. Remove contamination, acid etch, and rinse floors with clear water.
2. Verify that required acid-alkali balance is achieved.
3. Allow to dry.

K. Mosaic Tile Floors and ceramic wall base to receive epoxy coating:
1. Tile shall be dull, clean and in sound condition. Patch as required.
2. Remove contamination, acid etch, and rinse floors and base with clear water.
3. Verify that required acid-alkali balance is achieved.
4. Allow to dry.

L. Copper Surfaces Scheduled for Paint Finish:

1. Remove contamination by steam, high-pressure water, or solvent washing.
2. Apply vinyl-etch primer immediately following cleaning.

M. Copper Surfaces Scheduled for Natural Oxidized Finish:

1. Remove contamination by applying oxidizing solution of copper acetate and ammonium chloride in acetic acid.
2. Rub on repeatedly for required effect, and, once attained, rinse surfaces with clear water and allow to dry.

N. Gypsum Board Surfaces:

1. Fill minor defects with filler compound.
2. Spot-prime defects after repair.

O. Galvanized Surfaces:

1. Remove surface contamination and oils, and wash with solvent.
2. Apply coat of etching primer.

P. Concrete and Unit Masonry Surfaces Scheduled to Receive Paint Finish:

1. Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter.
2. Remove oil and grease with solution of tri-sodium phosphate, rinse well, and allow to dry.
3. Remove stains caused by weathering of corroding metals with solution of sodium metasilicate after thoroughly wetting with water, and allow to dry.

Q. Plaster Surfaces:

1. Fill hairline cracks, small holes, and imperfections with latex patching plaster.
2. Make smooth and flush with adjacent surfaces.
3. Wash and neutralize high-alkali surfaces.

R. Gypsum and Plaster Surface behind stage:

1. Fill hairline cracks, small holes, and imperfections with latex patching plaster.
2. Make smooth and flush with adjacent surfaces to Level 5 gypsum wallboard finish.
3. Wash and neutralize high-alkali surfaces.

S. Uncoated Steel and Iron Surfaces:

1. Remove grease, mill scale, weld splatter, dirt, and rust.
2. If heavy coatings of scale are evident, remove by power tool wire brushing or by sandblasting.
3. Clean by washing with solvent.
4. Apply treatment of phosphoric acid solution, ensuring that weld joints, bolts, and nuts are similarly cleaned.
5. Spot-prime paint after repairs.

T. Shop-Primed Steel Surfaces:

1. Sand and scrape to remove loose primer and rust.
2. Feather edges to make touch-up patches inconspicuous.
3. Clean surfaces with solvent.
4. Prime bare steel surfaces.

U. Interior Wood Items Scheduled to Receive Paint Finish:

1. Wipe off dust and grit prior to priming.
2. Seal knots, pitch streaks, and sappy sections with sealer.
3. Fill nail holes and cracks after primer has dried.
4. Sand between coats.

V. Interior Wood Items Scheduled to Receive Transparent Finish:

1. (Floors) Sand to smooth finish

2. Wipe off dust and grit prior to sealing.
3. Seal knots, pitch streaks, and sappy sections with sealer.
4. Fill nail holes and cracks after sealer has dried.
5. Sand lightly between coats.

W. Exterior Wood Scheduled to Receive Paint Finish:

1. Remove dust, grit, and foreign matter.
2. Seal knots, pitch streaks, and sappy sections.
3. Fill nail holes with tinted exterior paintable calking compound after prime coat has been applied.

X. Exterior Wood Scheduled to Receive Transparent Finish:

1. Remove dust, grit, and foreign matter.
2. Seal knots, pitch streaks, and sappy sections with sealer.
3. Fill nail holes with tinted exterior calking compound after sealer has been applied.

Y. Glued-Laminated Beams: Prior to finishing, wash surfaces with solvent, and remove grease and dirt.

Z. Wood Doors Scheduled for Painting: Seal wood door top and bottom edge surfaces with tinted primer.

AA. Metal Doors Scheduled for Painting: Prime metal door at top and bottom edge surfaces.

BB. Existing Work:

1. Extend existing paint and coatings installations using materials and methods compatible with existing installations and as specified.

3.3 APPLICATION

A. Comply with MPI - Architectural Painting Manual.

B. Do not apply finishes to surfaces that are not dry.

C. Apply each coat to uniform appearance.

D. Apply each coat of paint slightly darker than preceding coat, unless specified otherwise.

E. Sand wood and metal surfaces lightly between coats to achieve required finish.

F. Cleaning:

1. Vacuum surfaces to remove loose particles.
2. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Fillers:

1. If clear finishes are required, tint fillers to match wood.

2. Work fillers into grain before set, and wipe excess from surface.

H. Concealed Surfaces:

1. Prime concealed surfaces of interior and exterior woodwork with primer paint.
2. Prime concealed surfaces of interior wood surfaces scheduled to receive stain or varnish finish with gloss varnish reduced 25 percent with thinner.

I. Finishing Mechanical and Electrical Equipment:

1. Schedule of Color-Coding and Identification Banding of Equipment, Ductwork, Piping, and Conduit: As specified in Section(s) 22 05 53 - Identification for Plumbing Piping and Equipment, 23 05 53 - Identification for HVAC Piping and Equipment, 26 05 53 - Identification for Electrical Systems, 27 05 53 - Identification for Communications Systems.
2. Paint shop-primed equipment.
3. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components, and paint separately.
4. Prime and paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, and, except where these items are shop finished.
5. Paint interior surfaces of air ducts and convector and baseboard heating cabinets visible through grilles and louvers with one coat of flat black paint to visible surfaces.
6. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
7. Paint exposed conduit and electrical equipment installed in finished areas.
8. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
9. Color-Coding:

    a. Color-code equipment, piping, conduit, and exposed duct work according to indicated requirements.
    b. Color band and identify with flow arrows, names, and numbering.

10. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings that were removed prior to finishing.

3.4 FIELD QUALITY CONTROL

A. Section 01 40 00 - Quality Requirements: Requirements for inspecting and testing.

B. Section 01 70 00 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.

C. Inspecting and Testing: Comply with MPI - Architectural Painting Manual.

3.5 CLEANING

A. Section 01 70 00 - Execution and Closeout Requirements: Requirements for cleaning.

B. Collect waste material that may constitute fire hazards, place in closed metal containers, and remove daily from Site.

3.6 ATTACHMENTS

A. Schedule - Interior Surfaces:
   1. Wood - Painted:
      a. One coat of latex prime sealer, Wall and Wood Primer.
      b. Two coats of latex enamel, satin, S-W ProClassic.
   2. Wood - Transparent:
      a. Filler coat (for open grained wood only) Min Wax wood conditioner.
      b. One coat of stain. S-W Wood Classics Oil Stain, A49 Series, Minwax or BAC wiping stain.
      c. Two coats of water based polyurethane with satin finish: S-W A64 Series Wood Classics or Kem Aqua Lacquer T75-F527.
   3. Concrete, existing Concrete Block exposed to view (PNT-1)
      a. Contractor shall verify if existing paint is alkyd base (where painted).
      b. Prime: one coat prime with ProBlock Seals & Bonds B51 W20.
      c. Paint: two coats ProMar 200 Zero VOC Interior Latex Eg-Shel B20-2600 Series (4 mils wet, 1.4 mils dry per coat).
   4. Steel – Unprimed:
      a. One coat of latex primer, S-W ProCryl.
      b. Two coats of latex enamel, semi-gloss SherCryl. (4 mils wet, 1.4 mils dry per coat).
   5. Steel - Primed:
      a. Touch-up with latex primer.
      b. Two coats of latex enamel, semi-gloss. (4 mils wet, 1.4 mils dry per coat).
      c. S_W ProMar 200 Latex Semi-Gloss, B31W2200.
   6. Gypsum Board and Plaster Walls (PNT-2):
      a. One coat of latex primer sealer. S-W Latex Primer B28WF162.
      b. Two coats of latex enamel, eggshell.
      c. S-W ProMar 200 Latex Eg-Shell.
   7. Gypsum Board Walls in Bathrooms and Mechanical Rooms (PNT-2):
      a. One coat of latex primer sealer. S-W Contractor Latex Primer B28WF162.
      b. Two coats of latex enamel, semi-gloss, Industrial PreCat SemiGloss K46W151 (4 mils wet, 1.4 mils dry per coat).

END OF SECTION