

**SECTION 00 01 01
PROJECT TITLE PAGE**

**PROJECT MANUAL
FOR**

MUSKEGON POLICE DEPARTMENT - FIRST FLOOR RENOVATIONS

ARCHITECT'S PROJECT NUMBER: 1531-24.

CITY OF MUSKEGON

933 TERRACE STREET

MUSKEGON, MICHIGAN 49440

DATE: 01.23.2025

**PREPARED BY:
CONCEPT DESIGN STUDIO, INC.**

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**SECTION 00 11 13
NOTICE TO BIDDERS**

1.1 NOTICE TO BIDDERS

- A. City of Muskegon, Muskegon, Michigan, will receive proposals from qualified contractors for renovations to the Muskegon Police Department First Floor Offices located at Muskegon City Hall, 933 Terrace Street, Muskegon, MI 49440
- B. The Owner will enter into one contract with the successful General Contractor who will be fully responsible for all trades and for coordination of all required work between trades. It is the owner's goal to complete this project by July of 2025.
- C. Proposals must be mailed or delivered in person to the City of Muskegon Clerk's Office, 933 Terrace Street, Muskegon, MI 49440; Phone: 231-724-6705. All proposals must be sealed in envelopes, plainly labeled "Muskegon Police Department – First Floor Renovations" and must be received prior to 2:00 P.M., local time, on Thursday, February 13th, 2025. Bids will be publicly opened by the City of Muskegon Clerk's Office, 933 Terrace Street, Muskegon, MI 49440. Evaluation of proposals and award will be at a later date; the successful contractor will receive a letter of intent prior to receipt of contract.
- D. A mandatory Pre-bid meeting held on Thursday, January 30th, 2025 @ 2:00 P.M. at the Site.
- E. The Schedule of Work shall be as follows:

February 13 th , 2025 at 2:00 PM	Bids Due
February 25 th , 2025	Anticipated award of contract
March 3 rd , 2025	Anticipated start of construction
June 27 th , 2025	Anticipated substantial Completion

- F. All bidders are required to furnish Bid Security in the amount of five (5%) percent of the Base Bid. Form of the security may be a bid bond, certified or cashiers' check made payable to City of Muskegon. This will be a guarantee that the bidder selected by the City of Muskegon will furnish the required PLM Bonds; failure to do so could mean forfeiture of the Bid Security.
- G. All bidders must indicate, where shown on the Proposal Form, the cost of Performance and Labor and Material Payment Bonds covering 100% of the value of the Project. Do not include the cost of the Bonds in the Base Bid.
- H. All LOCAL PREFERENCE
The City Commission may give preference to local vendors as follows:
 - Vendors located in the City of Muskegon may be awarded purchases or contracts when the lowest qualified local bid/price is within 2% or less of the lowest qualified non-local bid.
 - An additional 0.5% difference in bid amount (for a total of 2.5%) will be considered for those qualified vendors located in the City of Muskegon which are not-for-profit and provide social services to City of Muskegon residents.
 - Vendors located in Muskegon County may be awarded purchases or contracts when the lowest qualified local bid/price is within 1% or less of the lowest non-local bid.
 - For purchases under \$1,000, local vendors shall be solicited unless valid reasons determine this is not in the best interest of the City.

I. **DISADVANTAGED CONTRACTOR GOALS**

The City Commission establishes goals for disadvantaged contractor participation in each trade as follows:

- 14% minority owned businesses
- 7% female owned businesses

A Disadvantaged Contractor Affidavit listing all disadvantaged contractors that were contacted to participate on the project as sub-contractors must be submitted by each bidder. The affidavit must clearly state why each potential subcontractor was not considered for inclusion in the project. A disadvantaged contractor refers to businesses that are owned and controlled by minorities, women, and other socially and economically disadvantaged persons.

- J. Bids will be evaluated based on the requirements determined in the invitation for bids. These requirements may include inspection, testing, quality, workmanship, experience, delivery, warranty, and suitability for a particular purpose. Bids that do not comply with all criteria set forth in the invitation to bid may be subject to disqualification by City Commission.
- K. Withdrawal of inadvertently erroneous bids before or after award, or cancellation of awards or contracts based on such bid mistakes, shall be permitted. After bid opening, no changes in bid prices or other provisions of bids prejudicial to the interest of the city or fair competition shall be permitted. Except as otherwise provided, all decisions to permit the withdrawal of bids, or to cancel awards or contracts based on bid mistakes, shall be supported by a written determination made by the Division Head, endorsed by the City Manager and approved by the City Commission.
- L. Award shall be made to the qualified bidder whose bid is determined to be the most advantageous to the city, taking into consideration price and the evaluation criteria set forth in the invitation for bids, as determined by City Commission.
- M. Applicable Michigan use and sales tax apply to this project.
- N. All bidders should note that this project is being funded with local resources and does not require prevailing wages.
- O. INSURANCE REQUIRMENTS

The Bidder will be required to comply with the following insurance and indemnity requirements BEFORE ANY AGREEMENTS CAN BE EXECUTED:

Hold Harmless Agreements: To the fullest extent permitted by law, Consultant agrees to defend, pay on behalf of, indemnify, and hold harmless the City, its elected and appointed officials, employees, volunteers and others working on behalf of the City against any and all claims, demands, suits, or loss, including any costs connected therewith, and for any damages which may be asserted, claimed or recovered against or from the City, its elected and appointed officials, employees, volunteers, or others working on behalf of the City, by reason of personal injury, including bodily injury and death, property damage, including loss of use thereof, and/or the effects of or release of toxic and/or hazardous material which arises out of or is in any way connected or associated with this contract. The obligation to defend and hold harmless extends to Consultant's employees, agents, subcontractors, assigns and successors.

Consultant Insurance Requirements: Consultant shall not commence work under this contract until obtaining the insurance required under this paragraph. All coverage shall be with insurance companies licensed and admitted to do business in the State of Michigan and Best

Rated A VIII. All coverage shall be with insurance carriers acceptable to the City.
Workers' Compensation Insurance: The Consultant shall procure and maintain during the life of this contract, Workers' Compensation Insurance, including Employer's Liability coverage, in accordance with all applicable Statutes of the State of Michigan.

General Liability Insurance: The Consultant shall procure and maintain during the life of this contract, commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than \$500,000 per occurrence and/or aggregate combined single limit, Personal Injury, Bodily Injury and Property Damage. Coverage shall include the following extensions: (a) Contractual Liability; (b) Products and Completed Operations; (c) Independent Contractor's Coverage; (d) Broad Form General Liability Extensions or equivalent.

Motor Vehicle Liability: The Consultant shall procure and maintain during the life of this contract Motor Vehicle Liability Insurance, including Michigan no-fault coverage, with limits of liability of not less than \$500,000 per occurrence or combined single limit Bodily Injury and Property Damage. Coverage shall include all owned vehicles, all non- owned vehicles and all hired vehicles.

- P. Availability of Documents: Complete sets of documents may be obtained at the following address:

Ajax Imaging; 777 East Sherman Boulevard, Muskegon, MI 49444.

Drawings may be viewed at the Architects office.

Contact the Architect for digital files.

- Q. The Owner reserves the right to accept or reject any or all bids and to waive all irregularities in Proposals. Proposals shall remain firm for thirty (30) days from date of Bid Opening.

END OF SECTION

SECTION 00 22 13
SUPPLEMENTAL / SPECIAL CONDITIONS TO THE INSTRUCTIONS TO BIDDERS

THE FOLLOWING CONDITIONS AMEND, SUBTRACT OR ADD TO THE
INSTRUCTIONS TO BIDDERS, AIA DOCUMENT A-701, 1997 EDITION

ARTICLE 2

BIDDERS REPRESENTATIONS

- 2.1.4 DELETE the word "Bid" and INSERT therefore the words "Base Bid".

ARTICLE 3

BIDDING DOCUMENTS

3.3 SUBSTITUTIONS

- 3.3.2 In the first sentence DELETE all the wording after the word "unless" and in the second sentence DELETE the first two words "Such requests". INSERT the word "it" after "unless" and join the first two sentences together.

ARTICLE 4

BIDDING PROCEDURES

4.1 FORM AND STYLE OF BIDS

- 4.1.7 DELETE the words "Copy of the" after the first word "Each". In the third sentence DELETE the word "copy" after the word "Each" and INSERT the word "Bid".

ARTICLE 7

PERFORMANCE BOND AND PAYMENT BOND

7.1 BOND REQUIREMENTS

- 7.1.1 DELETE this paragraph and INSERT the following:

If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract. The Owner, subsequent to the award of contracts, shall reimburse the cost of their Bond Premiums to the Bidder upon submission of the Bidders premium cost invoice to the Owner. Bonds may be secured through the Bidder's usual sources.

ADD the following paragraph:

7.1.4 The Owner reserves the right to waive bonds for any Contractor. All Bidders shall anticipate the need to provide bonds; however, the cost of these bonds shall **not** be included in the Base Bid.

11.3.7 THRU 11.3.10 DELETE these sections completely.

11.4.1 MODIFY as follows:

11.4.1 Each Contractor to whom awards are made and if required shall furnish a contract Performance Bond and Labor Material Payment Bond within ten (10) days after official notice of the contract by the Owner. Said contract Performance Bond shall be in the amount at least equal to one hundred percent (100%) of the contract price as security for:

- 1) The faithful performance of all provisions of the contract and the satisfactory completion of work included thereunder.
- 2) The payment of all persons performing labor and furnishing materials in connection with the contract.
- 3) The covering all guarantees included herein.

11.4.3 ADD the following:

The successful bidder must furnish a Labor and Material Payment Bond for the full amount (100%) of the contract with the same conditions as stated.

END OF SECTION

**SECTION 00 24 12
PROPOSAL SECTION**

ATTENTION ALL BIDDERS

A. MANDATORY INTERFACES

A.1 The scope of each contractor's work is defined in these specifications. Each sub-contractor shall familiarize himself with the requirements of those trades that interface with his own. He shall consider the fact that his work will interface with the work of another sub-contractors.

B. BIDDING AND AWARDS

B.1 All Contractors must submit their proposals on the form provided. Failure to do so will jeopardize the offerers chances of receiving an award.

C. ACCEPTANCE OR REJECTION OF BIDS

C.1 The bidder acknowledges the right of the Owner to accept or reject any and all bids and to waive any informality or irregularity in any bid received.

C.2 The bidder further represents that neither his Work nor the Work of other sub-contractors will be prejudiced because of sex, race, color, creed, or labor affiliation of other contractors under Contract to the Owner on this project.

D. PROMPTNESS OF EXECUTION

D.1 It is the intention of the Owner to complete the Project by May of 2025. Whereas varying conditions inherent to construction will vary the progress of the work, it is the intent of this contract that each sub-contractor maintain the progress at the quickest possible pace.

E. PAYMENT FOR STORED MATERIALS

E.1 As a means of offsetting escalation on short-lead items of material and equipment, and in the interest of obtaining good competitive bids, the Owner will provide payment for contract items stored off as well as on the site of the work. In order to qualify for payment, the material or equipment must be safely stored, protected and insured against loss or damage, inspected and dedicated to this Project only. Any extra cost of off-site storage is to be included in the proposal.

E.2 Materials stored within contract limits shall be in an area designated by the Owner. Materials or equipment lost through theft or mishandling shall be replaced by the contractor without cost to the Owner.

F. QUALITY CONTROL BY OWNER

F.1 The quality and completeness of the work is to be maintained on a day-to-day basis. Inaccurate, faulty, incomplete and defective work shall be corrected by the contractor as it is brought to his attention by the Owner's Representative. Failure to cooperate in this continuous punch list effect will affect completion percentages developed for Progress Payments. When your work is complete, request inspection.

G. CONTRACTOR QUALITY CONTROL

G.1 It is the intent that each sub-contractor be responsible for the quality of his workmanship within the requirements of the contract documents and within the context of the level of workmanship inherent to the industry. Every care shall be exercised to ensure that the quality specified is the quality provided.

- G.2 If at any time a contractor is of the opinion that the quality of his work is, or will be, jeopardized as a result of the schedule or coordination of the Project, or for any other reason known to him, he shall immediately stop work and just as immediately inform the Owner of his action and reasons therefore. The contractor shall document his action and his reasons in writing on the same day his action took place, and submit it to the Owner for the record, with a copy sent to the Architect. Upon immediate investigation by the Owner and the Architect, a decision shall be made on the point of jeopardy, and the problem resolved in accordance with the intent of the contract documents.
- H. LAYOUT AND MEASUREMENTS
- I.1 The responsibility for all layout and measurements pertaining to the work of each sub-contractor is his own. Each sub-contractor shall verify the dimensional accuracy of the work his work is reliant upon. He shall report all inaccuracies to the Architect and not proceed until corrections are made. If a Contractor inadvertently or knowingly, proceeds with his work on dimensionally inaccurate work of another, he will be liable for the cost of all corrections to his work when the error is corrected. (Ref. Article 18 Supplemental General Conditions)
- I. MANDATORY ATTENDANCE AT MEETINGS
- I.1 It is the responsibility of each sub-contractor, under the terms of the contract, to attend Project and Progress Meetings as determined by the Owner. (Ref. Article 17 Supplemental General Conditions)
- J. FINAL PUNCH LIST PROCEDURE
- J.1 When the Primary Contractor's work is ninety-five percent (95%) complete, he will be provided with a blank Certificate of Substantial Completion, which he is to file with the Owner after proper certification by the A/E. A listing of work in need of correction and a list of incomplete items shall be attached to the Certificate when it is filed by the Contractor. The A/E shall have input to each list so as to insure their completeness.
- J.2 The Primary Contractor will be allowed fifteen (15) days to complete the items on both of his lists beginning from the date stipulated on the Certificate of Substantial Completion. To insure this accomplishment, the Owner shall issue a letter to the General Contractor, on the date the Owner accepts the Substantial Completion status of each sub-contractor, and in accordance with Article 3.4 of the General Conditions of Contract, AIA Document A201.
- J.3 The Primary Contractor shall begin completion and correction activities within seven (7) days of receipt of the letter and complete all activities within the fifteen (15) day period specified. Contractors failing to perform in accordance with these time parameters will be subject to the provisions of Article 3.4 and the work will be completed by others as provided.
- K. PRE ON-SITE ACTIVITY MEETINGS
- K.1 The Primary Contractor and sub-contractors are required to meet on the site with the Owner prior to beginning his work on site. The purpose of the meeting is to thoroughly review the intent of the contract documents. Attendance at the pre-construction meeting qualifies a Contractor for this requirement.

END OF SECTION

**SECTION 00 24 13
DESCRIPTION OF WORK**

1 DESCRIPTIONS

1.1 GENERAL CONTRACTOR

- A. Work Included: The contract of this work shall include all the labor, materials, and permits necessary and incidental to the complete construction, as specified herein for the Muskegon Police Department - First Floor Renovations located at the Muskegon City Hall, 933 Terrace Street.
- B. The adjoining facilities **will** be occupied during construction.
- C. The contractor shall maintain proper barricades and other protection for the public.
- D. The Contractor shall provide, a full-time field superintendent acceptable to the Owner, and coordinate the work and all other Sub-trades.
- E. Building Layout: It shall be the responsibility of the Contractor to have the building laid out, establishing all lines and grades and maintaining a check on the same throughout construction. Contractors shall be responsible for maintaining all elevations in relation to existing finish floor elevations as set by this Contractor.
- F. Guarantee and Waiver of Lien:
 - 1. All work shall be guaranteed for one year from date of acceptance, unless specifically required for a longer guarantee, during which time any imperfections or failure of products, which may develop in workmanship or materials shall be made good without cost to the Owner.
 - 2. When required for payment or closing out of contract, guarantees and waivers of liens shall be provided by contractors, sub-contractor and materials suppliers.
- G. Permits:
 - 1. The Permit required for the Proposed Project will be obtained from the City of Muskegon.
 - 2. The General Contractor shall be responsible for any additional permits required by the City of Muskegon or Muskegon County, Michigan.
 - 3. The General Contractor is also responsible to pay for any and all fees in connection with the required permits and permit applications.
 - 4. Permits are required for, but not limited to, the following:
 - a. Building, Mechanical, Electrical & Plumbing
- H. Bonding & Licensing: The Primary Contractor and Sub-Contractors are required to comply with the City of Muskegon requirements for Bonding, Insurance and Licensing before commencement of any and all work.

1.2 PLUMBING CONTRACTOR - SUB-CONTRACTOR TO THE GENERAL CONTRACTOR

- A. The contract of this work shall include furnishing and installation of completely operable and tested plumbing / piping systems necessary and incidental to the complete construction, as indicated on the Drawings for the renovated space.
- B. Also included are sales tax, layout and cleanup, all necessary equipment, labor, inspections and approvals, and responsibility for receiving of equipment, erection and startup.

- C. Coordinate and work with the cities facilities team as necessary for shut-downs or other disruptions in service with-in the building.

1 .3 MECHANICAL CONTRACTOR - SUB-CONTRACTOR TO THE GENERAL CONTRACTOR

- A. The contract of this work shall include limited rework of the existing Heating and Ventilating systems within the renovated areas. The existing indoor air handling system is to remain as is with adjustments made to ductwork & re-heat coils, replacement of diffusers and rebalancing of the air supplied to the space. (3) of (5) existing, ductless mini-split systems to be relocated and made operational. Exhaust systems for the restroom and break room to be installed as indicated on the Drawings, for the renovated space.
- B. Also included are sales tax, layout and cleanup, all necessary equipment, labor, inspections and approvals, and responsibility for receiving of equipment, erection and startup.
- D. Controls for existing systems to be adjusted / reworked / relocated as necessary to function as designed. Work to be completed by owners vendor and coordinated by this contractor.

1 .4 ELECTRICAL CONTRACTOR - SUB-CONTRACTOR TO THE GENERAL CONTRACTOR

- A. Work Included:
 - 1. The Contractor shall provide all electrical distribution throughout the renovation, including panels, light fixtures, wiring devices, conduit, and wiring to power them.
 - 2. Contractor will be required to provide conduit systems as shown on the drawings for the, data system, security system and alarm system. Coordinate as necessary with owner. Data / IT, Security and Alarm contractors are all direct Sub Contractors of the City.
 - 3. Install and maintain all required temporary power and lighting on job site.
 - 4. Perform all related caulking, marking and coding; clean electrical equipment; permits; and factory rep inspection and demonstration.
 - 5. Provide all final connections to equipment furnished by others, guarantees, field record drawings and systems identification.
 - 6. Also included are sales tax, layout and cleanup, all necessary equipment, labor, inspections and approvals, and responsibility for receiving of equipment, erection and startup.

END OF SECTION

**SECTION 00 41 00
PROPOSAL FORM**

PROPOSAL DUE

(February 13th, 2025 at 2:00 P.M., Local
Time)

The **GENERAL CONTRACTOR PROPOSAL** shall include and cover ALL CONSTRUCTION TRADES, including but not limited to; Building, Plumbing, Mechanical, and Electrical trades, as well as being responsible for all coordination between trades.

Please indicate Company name above.

PROJECT: "Muskegon Police Department - First Floor Renovations, located at 933 Terrace Street, Muskegon City Hall"

TO: City of Muskegon
Clerk's Office
933 Terrace Street
Muskegon, MI 49442

ATTN: Bryan Prindle

The undersigned represents that they have:

- A. Familiarized themselves with the local conditions affecting the cost of the work and with the Contract Documents, including Instructions to Bidders; Proposal Section; General, Supplementary and Special Conditions; etc., Drawings, Specifications and any Addenda issued and on file at the office of Concept Design Studio, Inc. 800 E. Ellis Road, Suite 508, Norton Shores, MI 49441, and hereby proposes to perform everything required to provide and furnish all labor, materials, necessary tools, expendable equipment, and all utility and transportation services, etc., necessary to perform and complete in a workmanlike manner all of the Work required for the Muskegon Police Department - First Floor Renovations, Muskegon City Hall, 933 Terrace Street, Muskegon, MI 49440.
- B. in accordance with the Contract Documents, including Addenda No. _____, _____.
- C. Included with this proposal a Bid Bond, Certified or Cashier's Check in the amount of five (5) percent or _____ dollars (\$_____).
- D. Reviewed the Work fully understands the scope of the work required by interfacing Sub-Contractors as well as that required by the General Contractor, all of which is covered in this Proposal.
- E. Agreed that their proposal, if accepted by the Owner, will be the basis for a contract directly with the Owner and to enter into such contract in accordance with the Intent of the Contract Documents.

Concept Design Studio
800 East Ellis Road, Suite 508, Norton Shores, MI 49441

PH: (231) 799-4838
FX: (231) 799-4837

AGREEMENT

In submitting this bid, it is understood that the right is reserved by the Owner to reject any or all bids. It is agreed that this bid is binding for a period of thirty (30) - days from the opening thereof.

Date _____

COMPANY NAME _____

ADDRESS _____

PHONE _____

BY _____

(Signature)

(Name - Type or Print)

TITLE _____

SECTION 01 33 00 SUBMITTALS AND SUBSTITUTIONS

1 GENERAL

1.1 DESCRIPTION

- A. Work Included:
 - 1. Wherever possible throughout the Contract Documents, the minimum acceptable quality of workmanship and materials has been defined by manufacturer's name and catalog number, reference to recognized industry and government standards, or description of required attributes and performance.
 - 2. To ensure that the specified products are furnished and installed in accordance with design intent, procedures have been established for advance submittal of design data and for their review by the Architect/Engineer.
 - 3. Make all submittals required by the Contract Documents, and revise and resubmit as necessary to establish compliance with the specified requirements.
- B. Related Work Described Elsewhere: Individual requirements for submittals are described in other pertinent Sections of these Specifications.

1.2 QUALITY ASSURANCE

- A. Coordination of Submittals: Prior to each submittal, carefully review and coordinate all aspects of each item being submitted and verify that each item and the submittal conforms in all respects with the requirements of the Contract Documents. By affixing the Contractor's signature to each submittal, certify that this coordination has been performed.
- B. Certificates of Compliance:
 - 1. Certify that all materials used in the work comply with all specified provisions thereof. Certification shall not be construed as relieving the Contractor from furnishing satisfactory materials if, after tests are performed on selected samples, the material is found not to meet specified requirements.
 - 2. Show on each certification the name and location of the work, name and address of contractor, quantity and date or dates of shipment or delivery to which the certificate applies, and name of the manufacturing or fabricating company. Certification shall be in the form of letter or company-standard forms containing all required data. Certificates shall be signed by an officer of the manufacturing or fabricating company.
 - 3. In addition to the above information, all laboratory test reports submitted with Certificates of Compliance shall show the date or dates of testing, the specified requirements for which testing was performed, and results of the test or tests.

1.3 SUBMITTALS

- A. Certificates of Compliance: Upon completion of the work, and as a condition of its acceptance, submit to the Architect/Engineer all Certificates of Compliance.
- B. Make all submittals of Shop Drawings, Samples, requests for substitution, and other items, in strict accordance with this Section.

2 PRODUCTS

2.1 SUBMITTAL SCHEDULE

- A. General: Compile a complete and comprehensive schedule of all submittals anticipated to be made during progress of the work. Include a list of each type of item for which Contractor's Drawings, Shop Drawings, Certificates of Compliance, material samples, guarantees, or other types of submittals are required. Upon approval by the Architect/Engineer this schedule will become part of the Contract and the Contractor will be required to adhere to the schedule except when specifically otherwise permitted.
- B. Coordination: Coordinate the schedule with all necessary subcontractors and materials suppliers to ensure their understanding of the importance of adhering to the approved schedule and their ability to so adhere. Coordinate as required to ensure the grouping of submittals as described in Paragraph 3.2 below.

2.2 SHOP DRAWINGS

All Shop Drawings, except color selection samples (see below), shall be submitted electronically.

- A. Scale and measurements: Make all Shop Drawings accurately to a scale sufficiently large to show all pertinent aspects of the item and its method of connection to the work.
- B. **Electronic File submittal:** Files shall meet the following guidelines:
 - 1. Submittals made electronically will be sent back electronically to the address sent from.
 - 2. Only .PDF's will be accepted and must be unlocked and printable.
 - 3. E-mail file attachments shall not exceed a total of 10MB.
 - 4. Acceptable Sizes: 8-1/2 x 11, 11 x 17, 24 x 36, or 30 x 42. All other sizes or file formats will be rejected.
 - 5. Architect will not be responsible for e-mails that are rejected or fail to be received for any reason. File should be sent with "Return Receipt Notification".
- C. Review of Shop Drawings: Distribution of processed Shop Drawings for the Architect/Engineer's use will be by the Architect/Engineer. All processed notations of the Architect/Engineer will be shown on the drawing(s) when it is returned to the Contractor. The Contractor shall distribute all copies required for his purposes.

2.3 MANUFACTURER'S LITERATURE

- A. General: Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly indicate which portion of the contents is being submitted for review.
- B. Number of Copies Required: Submit the number of copies which are required to be returned plus two (2) copies which will be retained by the Architect/Engineer.

2.4 SAMPLES

- A. Accuracy of Samples: Samples shall be of the precise article proposed to be furnished.
- B. Number of samples required: Unless otherwise specified, submit all Samples in the quantity which is required to be returned plus one which will be retained by the Architect/Engineer.
- C. Samples Submission Process: All physical samples must be submitted along with a full color electronic scan of the sample for processing and recording purposes. Electronic scan shall be submitted in accordance with Paragraph 2.2/B (above).
- D. Reuse of Samples: In situations specifically so approved by the Architect/Engineer, the Architect/Engineer's retained sample may be used in the construction as one of the installed items.

2.5 COLORS AND PATTERNS

Unless the precise color and pattern is specifically described in the Contract Documents, and whenever a choice of color or pattern is available in a specified product, submit accurate color and pattern physical samples to the Architect/Engineer for review and selection.

2.6 SUBSTITUTIONS

A. Approval Required:

1. The Contract is based on the standards of quality established in the Contract Documents.
2. All products proposed for use, including those specified by required attributes and performance, shall require approval by the Architect/Engineer before being incorporated into the work.
3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this work by the Architect/Engineer.
4. Request for approval shall be submitted to the Architect a minimum of 10 days prior to bid date.

B. "Or Equal":

1. Where the phrase "or equal" or "or equal as approved by the Architect/Engineer", occurs in the Contract Documents, do not assume that materials, equipment, or methods will be approved as equal unless the item has been specifically approved for this work by the Architect/Engineer.
2. The decision of the Architect/Engineer shall be final.
3. Request for approval shall be submitted to the Architect a minimum of 10 days prior to bid date.

3 EXECUTION

3.1 IDENTIFICATION OF SUBMITTALS

- A. General: Consecutively number all submittals. Accompany each submittal with a Letter of Transmittal containing all pertinent information required for identification and checking of submittals.
- B. Internal Identification: On at least the first page of each copy of each submittal, and elsewhere as required for positive identification, clearly indicate the submittal number in which the item was included.
- C. Resubmittals: When material is resubmitted for any reason, transmit under a new Letter of Transmittal and with a new submittal number.
- D. Submittal Log: Maintain an accurate submittal log for the duration of the Contract, showing current status of all submittals at all times. Make the submittal log available for the Architect/Engineer's review upon request.

3.2 COORDINATION OF SUBMITTALS

- A. General: Prior to submittal for approval, use all means necessary to fully coordinate all material including, but not necessarily limited to:
 1. Determine and verify all interface conditions, catalog numbers, and similar data.
 2. Coordinate with other trades as required.
 3. Clearly indicate all deviations from requirements of the Contract Documents.

- B. Grouping of Submittals: Unless otherwise specified, make all submittals in groups containing all associated items to ensure that information is available for checking each item when it is received. Partial submittals may be rejected as not complying with the provisions of the Contract Documents and the Contractor shall be strictly liable for all delays so occasioned.

3.3 TIMING OF SUBMITTALS

- A. General: Make all submittals far enough in advance of scheduled dates for installation to provide all time required for reviews, for securing necessary approvals, for possible revisions and resubmittals, and for placing orders and securing delivery.
- B. Authority to Proceed: The notations "Processed", or "Processed with Notations", authorize the Contractor to proceed with fabrication, purchase, or both, of the items so noted, subject to the revisions, if any, required by the Architect/Engineer's review comments.
- C. Revisions: Make all revisions required by the Architect/Engineer. If the Contractor considers any required revision to be a change, he shall so notify the Architect/Engineer as provided for under "Changes" in the General Conditions. Show each drawing revision by number, date, and subject in a revision block on the drawing. Make only those revisions directed or approved by the Architect/Engineer.
- D. Revisions After Approval: When a submittal has been reviewed by the Architect/Engineer, resubmittal for substitution of materials or equipment will not be considered unless accompanied by an acceptable explanation as to why the substitution is necessary.

END OF SECTION

SECTION 01 40 00 QUALITY REQUIREMENTS

1 GENERAL

1.1 SECTION INCLUDES

- A. References and standards.
- B. Quality assurance submittals.
- C. Control of installation.
- D. Testing and inspection services.

1.2 REFERENCE STANDARDS

- A. ASTM C 1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008.
- B. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2008.
- C. ASTM C 1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2008.
- D. ASTM D 3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2008.
- E. ASTM E 329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing; 2008.
- F. ASTM E 543 - Standard Specification for Agencies Performing Nondestructive Testing; 2008a.

1.3 SUBMITTALS

- A. Testing Agency Qualifications: Prior to start of Work, submit agency name, address, and telephone number, and names of full time specialist and responsible officer.
- B. Test Reports: After each test/inspection, promptly submit one copy each of report directly to Architect/Engineer and directly to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.
 - h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Conformance with Contract Documents.
 - k. When requested by Architect/Engineer, provide interpretation of results.

2. Test report submittals are for Architect/Engineer's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.

1.4 REFERENCES AND STANDARDS

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

1.5 TESTING AND INSPECTION AGENCIES

- A. Contractor Employed Agency:
 1. Testing agency: Comply with requirements of ASTM E 329, ASTM E 543, ASTM C 1021, ASTM C 1077, and ASTM C 1093.
 2. Inspection agency: Comply with requirements of ASTM D3740 and ASTM E329.
 - a. Personnel performing visual weld inspection shall have certification as an ASW Certified Welding Inspectors (CWI) in accordance with the provisions of AWS QC1.
 - b. Personnel performing nondestructive testing other than visual shall be qualified as NDT Level II technicians in accordance with ASNT Recommended Practice No. SNT-TC-1A. Inspection agency shall provide testing procedures used.
 3. Laboratory: Authorized to operate in Michigan.
 4. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
 5. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

2 EXECUTION

2.1 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.

- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- D. Verify compliance with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Verify Work is being performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

2.2 TESTING AND INSPECTION

- A. See individual specification sections and Related Requirements listed above for testing and inspection required.
- B. Testing Agency Duties:
 - 1. Test samples of mixes submitted by Contractor.
 - 2. Provide qualified personnel at site. Cooperate with Architect/Engineer and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified standards.
 - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 5. Promptly notify Architect/Engineer and Contractor of observed irregularities or non-conformance of Work or products.
 - 6. Perform additional tests and inspections required by Architect/Engineer.
 - 7. Attend preconstruction meetings.
 - 8. Test Reports: After each test/inspection, promptly submit one copy each of report directly to Architect/Engineer and directly to Contractor.
- C. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
- D. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.

4. Notify Testing Agency a minimum of 24 hours prior to expected time for operations requiring testing/inspection services
5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect/Engineer.
- F. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.
- G. If, after re-testing, the construction is still found to be in non-conformance, the Architect/Engineer will direct an appropriate remedy.

END OF SECTION

**SECTION 01 42 19
APPLICABLE STANDARDS**

1 GENERAL

1.1 DESCRIPTION

- A. Work shall include the following:
1. Throughout the Contract Documents, reference is made to codes and standards which establish qualities and type of workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics.
 2. Where materials or workmanship are required by these Contract Documents to meet or exceed the specifically named code or standard, it is the Contractor's responsibility to provide materials and workmanship which meet or exceed the specifically named code or standard.
 3. It is also the Contractor's responsibility, when so required by the Contract Documents or by written request from the Owner, to deliver to the Owner all required proof that the materials or workmanship, or both, meet or exceed the requirements of the specifically named code or standard. Such proof shall be in the form requested in writing by the Owner, and generally will be required to be copies of a certified report of tests conducted by a testing agency approved for that purpose by the Owner.
- B. Related Work Described Elsewhere: Specific naming of codes or standards occurs on the Drawings and in other Sections of these Specifications.

1.2 QUALITY ASSURANCE

- A. Familiarity with Pertinent Codes and Standards: In procuring all items used in this Work, it is the Contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements.
- B. Rejection of Non-Complying Items: The Owner reserves the right to reject items incorporated into the Work which fail to meet the specified minimum requirements. The Owner further reserves the right, and without prejudice to other recourse the Owner may take, to accept non-complying items subject to an adjustment in the Contract Amount as approved by the Owner.
- C. Applicable standards listed in these Specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:
1. AA = Aluminum Association, 818 Connecticut Avenue, N.W., Washington, DC 20006
 2. AABC = Associated Air Balance Council, 1000 Vermont Avenue, N.W., Washington, DC 20005
 3. AASHTO = American Association of State Highway and Transportation Officials, 341 National Press Building, Washington, D.C. 20004.
 4. ACI = American Concrete Institute, Box 9094, Farmington Hills, Michigan 48333-9094.
 5. ADC = Air Diffusion Council, 230 North Michigan Avenue, Chicago, IL 60601
 6. AGC = Associated General Contractors of America, 1957 E. Street, N.W., Washington, DC 20006
 7. AI = Asphalt Institute, Asphalt Institute building, College Park, MD 20740

8. AIA = American Institute of Architects, 1735 New York Avenue, N.W., Washington, DC 20006
9. AISC = American Institute of Steel Construction, Inc., 1221 Avenue of the Americas, New York, New York 10020.
10. AISI = American Iron and Steel Institute, 1000 16th Street, N.W., Washington, DC 20036
11. AITC = American Institute of Timber Construction, 333 W. Hampden Avenue, Englewood, CO 80110
12. AMCA = Air Movement and Control Association, 30 West University Drive, Arlington Heights, IL 60004
13. ANSI = American National Standards Institute (successor to USASI and ASAO, 1430 Broadway, New York, New York 10018.
14. APA = American Plywood Association, Box 11700 Tacoma, WA 98411
15. ARI = Air-Conditioning and Refrigeration Institute, 1501 Wilson Boulevard, Arlington, VA 22209
16. ASHRAE = American Society of Heating, Refrigerating and Air Conditioning Engineers, 1791 Tullie Circle, N.E., Atlanta, GA 30329
17. ASME = American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017
18. ASPA = American Sod Producers Association, 4415 West Harrison Street, Hillside, IL 60162
19. ASTM = American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.
20. AWI = Architectural Woodwork Institute, 2301 South Walter Reed Drive, Arlington, VA 22206.
21. AWPA = American Wood-Preservers' Association, 7735 Old Georgetown Road, Bethesda, MD 20014
22. AWS = American Welding Society, Inc., 2501 N.W. 7th Street, Miami, Florida 33125.
23. AWWA = American Water Works Association, Inc., 6666 West Quincy Avenue, Denver, Colorado 80235.
24. BIA = Brick Institute of America, 11490 commerce Park Drive, Reston, VA 22091.
25. CDA = Copper Development Association, 57th Floor, Chrysler Building, 405 Lexington Avenue, New York, NY 10174.
26. CLFMI = Chain Link Fence Manufacturers Institute, 1101 Connecticut Avenue, N.W., Washington, DC 20036.
27. CRSI = Concrete Reinforcing Steel Institute, 228 North LaSalle Street, Chicago, Illinois 60610.
28. CS = Commercial Standard of NBS, U.S. Department of Commerce, Government Printing Office, Washington, D.C. 20402.
29. DHI = Door and Hardware Institute, 7711 Old Springhouse Road, McLean, VA 22102.

30. EJCDC = Engineers' Joint Contract Documents Committee, American Consulting Engineers Council, 1015 15th Street, N.W., Washington, DC 20005
31. EJMA = Expansion Joint Manufacturers Association, 25 North Broadway, Tarrytown, NY 10591
32. FGMA = Flat Glass Marketing Association, 3310 Harrison, Topeka, Kansas 66611.
33. FM = Factory Mutual System, 1151 Boston-Providence Turnpike, P.O. Box 688, Norwood, MA 02062.
34. FS = Federal Specification, General Services Administration, Specifications and Consumer Information.
35. WFSIS= Distribution Section (WFSIS), Washington Navy Yard, Bldg. 197, Washington, DC 20407.
36. GA = Gypsum Association, 1603 Orrington Avenue, Evanston, IL 60201.
37. ICBO = International Conference of Building Officials, 5360 W. Workman Mill Road, Whittier, CA 90601.
38. IEEE = Institute of Electrical and Electronics Engineers, 345 East 47th Street, New York, NY 10017.
39. IMIAC = International Masonry Industry All-Weather Council, International Masonry Institute, 815 15th Street, N.W., Washington, DC 20005.
40. MBC = Michigan Building Code, PO Box 30254, Lansing, MI 48909.
41. MFMA = Maple Flooring Manufacturers Association, 60 Rivere Drive, Northbrook, IL 60062.
42. MIL = Military Specification, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.
43. ML/SFA= Metal Lath/Steel Framing Association, 221 North LaSalle Street, Chicago, IL 60601.
44. NAAMM = The National Association of Architectural Metal Manufacturers, 1033 South Boulevard, Oak Park, Illinois 60302.
45. NCMA = National Concrete Masonry Association, P.O. Box 781, Herndon, VA 22070.
46. NEBB = National Environmental Balancing Bureau, 8224 Old Courthouse Road, Vienna, VA 22180.
47. NEC = National Electrical Code (see NFPA).
48. NEMA = National Electrical Manufacturers Association, 155 East 44th Street, New York, New York 10017.
49. NFPA = National Fire Protection Association, 470 Atlantic Avenue, Boston, Massachusetts 02210.
50. NFPA = National Forest Products Association, 1619 Massachusetts Avenue, N.E., Washington, DC 20036.
51. NSWMA= National Solid Wastes Management Association, 1730 Rhode Island Ave., N.E., Washington, DC 20036.

52. NTMA = National Terrazzo and Mosaic Association, 3166 Des Plains Avenue, Des Plains, IL 60018.
53. NWMA = National Woodwork Manufacturers Association, 205 W. Touhy Avenue, Park Ridge, IL 60068.
54. PCA = Portland Cement Association, 5420 Old Orchard Road, Skokie, IL 60077.
55. PCI = Prestressed Concrete Institute, 201 North Wells Street, Chicago, IL 60606.
56. PS = Product Standard, U.S. Department of Commerce, Washington, DC 20203.
57. RCSHSB = Red Cedar Shingle and Handsplit Shake Bureau, 515 116th Avenue, Bellevue, WA 98004.
58. RIS = Redwood Inspection Service, One Lombard Street, San Francisco, CA 94111.
59. SDI = Steel Deck Institute, 135 Addison Avenue, Elmhurst, Illinois 60125.
60. SDI = Steel Door Institute, 712 Lakewood Center North, 14600 Detroit Avenue, Cleveland, OH 44107.
61. SIGMA = Sealed Insulating Glass Manufacturers Association, 111 East Wacker Drive, Chicago, IL 60601.
62. SJI = Steel Joist Institute, 1205 48th Avenue North, Suite A, Myrtle Beach, SC 29577.
63. SMACNA = Sheet Metal and Air Conditioning Contractors' National Association, 8224 Old Court House Road, Vienna, VA 22180.
64. SSPC = Steel Structures Painting Council, 4400 Fifth Avenue, Pittsburgh, Pennsylvania 15213.
65. TCA = Tile Council of America, Inc., P.O. Box 326, Princeton, New Jersey 08540.
66. UL = Underwriters' Laboratories, Inc., 207 East Ohio Street, Chicago, Illinois 60611.
67. WCLIB = West Coast Lumber Inspection Bureau, 6980 S.W. Varns Road, Box 23145, Portland, OR 97223.
68. WWPA = Western Wood Products Association, 1500 Yeon Building, Portland, OR 97204.
69. Fed. Specs. and Fed. Standards: Specifications Sales (3FRI), Building 197, Washington Navy Yard, General Service Administration, Washington, D.C. 20407.

END OF SECTION

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

1 GENERAL

1.1 DESCRIPTION

- A. Work Included: Temporary facilities and controls required for this work include, but are not necessarily limited to:
 - 1. Temporary utilities will be available within the work space.
 - 2. Enclosures such as tarpaulins, barricades, and canopies.
 - 3. Securing of the construction area.
- B. Related Work described Elsewhere:
 - 1. Except that all equipment furnished by contractors shall comply with all requirements of pertinent safety regulations, the ladders, planks, hoists, and similar items normally furnished by the individual trades in execution of their own portions of the work are not part of this section.

1.2 PRODUCT HANDLING

Use all means necessary to maintain temporary facilities and controls in proper and safe conditions throughout progress of the work.

1.3 JOB CONDITIONS

Make all required connections to existing utility systems with minimum disruption to services in the existing utility systems. When disruption of the existing service is required, do not proceed without the Architect/Engineer's approval and, when required, provide alternate temporary service.

2 PRODUCTS

2.1 UTILITIES

- A. General: All temporary facilities shall be subject to the Architect/Engineer's approval.
- B. Temporary Water: Available on-site within space.
- C. Temporary Power: To be coordinated by Electrician. Power is available with-in renovated space. Any 'special' power needs to be coordinated and provided by the Electrician.
- D. Temporary Office: provide a 'desk' with-in the work space, for documents / drawings. Trailer is not required.
- E. Temporary Access: Ladders, railings, barriers, scaffolds, etc., as required for the proper execution of the work shall be provided by the specific contractor and/or subcontractor requiring same.
- F. Toilet Facilities: Public facilities are available with-in the City Hall. Leave them as you found them!
- G. Glass Replacement: The General Contractor shall assume all costs of replacement of glass broken, cracked, or damaged by him. Glass scratched through improper cleaning shall be considered damaged and shall be replaced by the party that caused the damage.
- H. Cleaning Up: The General Contractor shall arrange for all clean-up operations. Clean-up must be timely as well as thorough in order to meet safety regulations and permit other contractors to perform without hindrance from dirt and debris. Coordinate location of dumpsters with Cities Facility Director.

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FX: (231) 799-4837

2 .2 ENCLOSURES

Furnish, install, and maintain for the duration of construction all required scaffolds, tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms, and other temporary construction necessary for proper completion of the work in compliance with all safety and other regulations.

END OF SECTION

SECTION 01 73 29 CUTTING AND PATCHING

1 GENERAL

1.1 DESCRIPTION

- A. Work Included: This Section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the work required to:
 - 1. Make the several parts fit properly.
 - 2. Uncover work to provide for installation, inspection, or both, of ill-timed work.
 - 3. Remove and replace work not conforming to requirements of the Contract Documents.
 - 4. Remove and replace defective work.
- B. Related Work Described Elsewhere:
 - 1. In addition to other requirements specified, upon the Owner's request, uncover work to provide for inspection by the Owner's Representative of covered work, and remove samples of installed materials for testing.
 - 2. Do not cut or alter work performed under separate contract without the Owner's written permission.

1.2 QUALITY ASSURANCE

Perform all cutting and patching in strict accordance with pertinent requirements of these Specifications and, in the event no such requirements are determined, in conformance with the Owner's written direction.

1.3 SUBMITTALS

- A. Request for The Owner's Consent:
 - 1. Prior to cutting which affects structural safety, submit written request to the Owner for permission to proceed with cutting.
 - 2. Should conditions of the work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Owner and secure his written permission prior to proceeding.

2 PRODUCTS

2.1 MATERIALS

For replacement of work removed, use materials which match as closely as possible to materials that were removed or damaged.

3 EXECUTION

3.1 CONDITIONS

- A. Inspection:
 - 1. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, backfilling, and patching.
 - 2. After uncovering the work, inspect conditions affecting installation of new work.
- B. Discrepancies: If uncovered conditions are not as anticipated, immediately notify the Owner and secure needed directions.

3 .2 PREPARATION PRIOR TO CUTTING

Provide all required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the work.

3 .3 PERFORMANCE

Perform all required excavating and backfilling as required under pertinent Sections of these Specifications. Perform cutting and removal by methods which will prevent damage to other portions of the work and will provide proper surfaces to receive installation of repair and new work.

END OF SECTION

**SECTION 01 74 00
CLEANING**

1 GENERAL

1.1 DESCRIPTION

- A. Work Included: Throughout the construction period, each Contractor shall maintain the site in a standard of cleanliness as described in this section.
- B. Related Work Described Elsewhere: In addition to standard described in this Section, comply with all requirements for cleaning up as described in various other sections of these specifications.

1.2 QUALITY ASSURANCE

- A. Inspection: Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.
- B. Codes and Standards: In addition to the standards described in this section, comply with all pertinent requirements of governmental agencies having jurisdiction.

2 PRODUCTS

2.1 CLEANING MATERIALS AND EQUIPMENT

Provide all required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

3 EXECUTION

3.1 PROGRESS CLEANING

- A. General:
 - 1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
 - 2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work.

3.2 FINAL CLEANING

Unless otherwise specifically directed, each Contractor is responsible for cleaning his own area/work.

- A. Building: As necessary to his work, the Contractor shall provide services to vacuum all carpeted areas, damp mop all hard surface areas of floor, wipe with clean damp cloth all tile and hard surface areas of walls and ceiling. Vacuum all construction dust off wood trim, millwork and equipment, clean windows and window frames (including removal of stickers/tags not required by codes), remove construction dust from all light fixtures and other suspended items.
- B. Cleaning Approval: Approval of final cleaning will be subject to Architect/Engineer(s) walk-through and punch list(s).

END OF SECTION

**SECTION 01 78 23
OPERATION AND MAINTENANCE DATA**

1 GENERAL

1.1 DESCRIPTION

- A. Work Included: To aid in the continued instruction of operating and maintenance personnel, and to provide a positive source of information regarding the products incorporated in the work, furnish and deliver the data described in this section and in pertinent other sections of these specifications.
- B. Related Work Described Elsewhere:
 - 1. Make all submittals in strict accordance with the provisions of Section 01 33 00.
 - 2. Required contents of submittals may also be amplified in other pertinent Sections.

1.2 QUALITY ASSURANCE

In preparation of data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with the requirements of this Section, and skilled in technical writing to the degree needed for communicating the essential data.

1.3 SUBMITTALS

- A. Preliminary: Submit two copies of a preliminary draft of the proposed Manual or Manuals to the Architect/Engineer, for review and comments.
- B. Final: Unless otherwise directed in other pertinent Sections, or in writing by the Architect/Engineer, submit three copies of the final Manual to the Architect/Engineer prior to indoctrination of operation and maintenance personnel.

2 PRODUCTS

2.1 INSTRUCTION MANUALS

- A. General: Where instruction are required to be submitted under other sections of these specifications, prepare in accordance with the following:
- B. Format:
 - 1. Size: 8-1/2" x 11".
 - 2. Paper: White bond, at least 20 lb. weight.
 - 3. Text: Neatly typewritten.
 - 4. Drawings: 11" in height preferable; bind in with text; foldout acceptable; larger drawings acceptable, but fold to fit within the Manual and provide a drawing pocket inside rear cover or bind in with text.
 - 5. Flysheets: Separate each portion of the Manual with neatly prepared flysheets briefly describing contents of the ensuing portion; flysheets may be in color.
 - 6. Binding: Use heavy-duty plastic or cardboard covers with binding mechanism concealed inside the Manual; 3-ring binders will be acceptable; all binding shall be subject to the Architect's approval.
 - 7. Measurements: Show the U.S. measurements plus the SI equivalents.

- C. Covers: Provide front and back covers for each Manual, using durable material approved by the Architect/Engineer and clearly identified on or through the front cover with a least the following information:

PROJECT NAME
(general subject of this Manual)
(space for approval signature of the Architect/Engineer
and approval date)

- D. Contents: Include at least the following:
1. Neatly typewritten index near the front of the Manual, giving immediate information as to location within the Manual of all emergency data regarding the installation.
 2. Complete instructions regarding operation and maintenance of all equipment involved, including lubrication, disassembly, and reassembly.
 3. Complete nomenclature of all parts of all equipment.
 4. Complete nomenclature and part number of all replaceable parts, name and address of nearest vendor, and all other pertinent data regarding procurement procedure.
 5. Electrostatic copy of all guarantees and warranties issued.
 6. Manufacturers' bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturer's data with which this installation is not concerned.
 7. Such other data as required in other pertinent Sections of these specifications.

3 EXECUTION

3.1 INSTRUCTION MANUALS

- A. Preliminary: Prepare a preliminary draft of each proposed Manual. Show general arrangement, nature of contents in each portion, probable number of drawings and their size, and proposed method of binding and covering. Secure the Architect/Engineer's approval prior to proceeding with final.
- B. Final: Complete the Manuals in strict accordance with the approved preliminary drafts and the Architect/Engineer's review comments.
- C. Revisions: Following the indoctrination and instruction of operation and maintenance personnel, review all proposed revisions of Manuals with the Architect/Engineer. If the Contractor is required by the Architect to revise previously approved Manuals, compensation will be made as provided under "Changes" in the General Conditions.

END OF SECTION

**SECTION 01 78 39
PROJECT RECORD DOCUMENTS**

1 GENERAL

1.1 DESCRIPTION

- A. Work Included:
 - 1. Throughout progress of the work, each contractor shall maintain an accurate record of all changes in the Contract Documents, as described in Paragraph 3.1 below.
 - 2. Upon completion of the work of this contract, transfer the recorded changes to a set of Record Documents, as described in Paragraph 3.2 below.
- B. Related Work Described Elsewhere:
 - Section 01 33 00: Submittals and Substitutions

1.2 QUALITY ASSURANCE

- A. General: Each contractor shall delegate the responsibility for maintenance of Record Documents to one person on the contractor's staff as approved in advance by the Architect/Engineer.
- B. Accuracy of Records: Thoroughly coordinate all changes within the Record Documents, making adequate and proper entries on each page of specifications and each sheet of drawings and other documents where such entry is required to properly show the change. Accuracy of records shall be such that future search for items shown in the Contract Documents may reasonably rely on information obtained from the approved Record Documents.
- C. Timing of Entries: Make all entries within 24 hours after receipt of information.

1.3 SUBMITTALS

- A. General: The Architect/Engineer's approval of the current status of Record Documents will be a prerequisite of the Architect/Engineer's approval of Requests for Progress Payment and Request for Final Payment under the Contract.
- B. Progress Submittals: Prior to submitting each request for progress payment, secure the Architect/Engineer's approval of the Record Documents as currently maintained.
- C. Final Submittal: Prior to submitting Request for Final Payment, submit the final Record Documents of the Architect/Engineer and secure his approval.

1.4 PRODUCT HANDLING

Use all means necessary to maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the work and transfer of the recorded data to the final Record Documents. In the event of loss of recorded data, use all means necessary to secure the data to the Architect/Engineer's approval; such means shall include, if necessary in the opinion of the Architect/Engineer, removal and replacement of concealing materials and, in such case, all replacements shall be to the standard originally specified in the Contract Documents.

2 PRODUCTS

2.1 RECORD DOCUMENTS

- A. Job Set: Promptly following Award of Contract, secure from the Architect/ Engineer at no charge to the Contractor, one complete set of all Documents comprising the Contract.

- B. Final Record Documents: At a time near the completion of the work, secure from the Architect/Engineer at no charge to the contractor, one complete set of reproducible of all Drawings included in the Contract.

3 EXECUTION

3.1 MAINTENANCE OF JOB SET

- A. Identification: Immediately upon receipt of the job set described in Paragraph 2.1 above, identify each of the Documents with the title "Record Documents - Job Set".
- B. Preservation:
 - 1. Considering the contract completion time, the probable number of occasions upon which the job set must be taken out for new entries and for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the approval of the Architect/ Engineer.
 - 2. Do not use the job set for any purpose except entry of new data and for review by the Architect/Engineer, until start or transfer of data to final Record Documents.
 - 3. Maintain the job set at the site of Work as that site is designated by the Architect/Engineer.
- C. Making Entries on Drawings: Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by note and by graphic line, as required. Date all entries. Call attention to the entry by a "cloud" around the area or areas affected. In the event of overlapping changes, different colors may be used for each of the changes.
- D. Making Entries on Other Documents:
 - 1. Where changes are caused by directives issued by the Architect/Engineer, clearly indicate the change by note in ink, colored pencil, or rubber stamp.
 - 2. Where changes are caused by contractor-originated proposal approved by the Architect/Engineer, including inadvertent errors by the Contractor which have been accepted by the Architect/Engineer, clearly indicate the change by note in erasable colored pencil.
 - 3. Make entries in the pertinent Documents as approved by the Architect/Engineer.
- E. Conversion of Schematic Layouts:
 - 1. In most cases on the Drawings, arrangement of conduits and circuits, piping, ducts, and other similar items, is shown schematically and is not intended to portray precise physical layout. Final physical arrangement is as determined by the Contractor, subject to the Architect/Engineer's approval. However, design of future modifications of the facility may require accurate information as to the final physical arrangement of items which are shown only schematically on the Drawings.
 - 2. Show on the job-set of Record Drawings, by dimension accurate to within 1", the center line of each run of items such as are described in Paragraph 3.1-E-1 above. Clearly identify the item by an accurate note such as "cast iron drain", "galv. water", etc. Show by symbol or note, the vertical location of the item ("under slab", "in ceiling plenum", "exposed", etc.). Make all identification sufficiently descriptive that it may be related reliably to the Specifications.

3. The Architect/Engineer may waive the requirements for conversion of schematic data where, in the Architect/Engineer's judgment, such conversion serves no beneficial purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the Architect/ Engineer.
4. Timing of Entries: Be alert to changes in the work from how it is shown in the Contract Documents. Promptly, and in no case later than 24 hours after the change has occurred and been made known to the Contractor, make the entry or entries required.
5. Accuracy of Entries: Use all means necessary, including the proper tools for measurement, to determine actual locations of the installed items.

3.2 FINAL RECORD DOCUMENTS

- A. General: The purpose of the final Record Documents is to provide factual information regarding all aspects of the work, both concealed and visible, to enable future modification of design to proceed with lengthy and expensive site measurement, investigations, and examination.
- B. Approval of Recorded Data Prior to Transfer: Following receipt of the sepia transparencies described in Paragraph 2.1-B above, and prior to start of transfer of recorded data thereto, secure a review by the Architect of all recorded data. Make all required revisions.
- C. Transfer of Data to Drawings: Carefully transfer all change data shown on the job-set of Record Drawings to the corresponding sepias, coordinating the changes as required, and clearly indicating at each affected detail and other drawing the full description of all changes made during construction and the actual location of items described in Paragraph 3.1-E above. Call attention to each entry by drawing a "cloud" around the area or areas affected. Make all change entries on the sepias neatly, consistently, and in ink or crisp black pencil.
- D. Transfer of Data to Other Documents: If the Documents other than Drawings have been kept clean successfully during progress of the Work, and if entries have been sufficiently orderly thereon to the approval of the Architect/Engineer, the job-set of those Documents (other than Drawings) will be accepted by the Architect/Engineer as final Record Documents for those Documents. If any such Document is not so approved by the Architect/Engineer, secure a new copy of that Document from the Architect/Engineer at the Architect/Engineer's usual charge for reproduction; carefully transfer the change data to the new copy and to the approval of the Architect/ Engineer.
- E. Review and Approval: Submit the completed total set of Record Documents to the Architect as described in Paragraph 1.3-C above. Participate in review meeting or meetings as required by the Architect/Engineer, make all required changes in the Record Documents, and promptly deliver the final Record Documents to the Architect/Engineer.

3.3 CHANGES SUBSEQUENT TO ACCEPTANCE

The Contractor shall have no responsibility for recording changes in the work subsequent to acceptance of the work by the Owner, except for changes resulting from replacements, repairs, and alternations made by Contractor as part of his guarantee.

END OF SECTION

**SECTION 02 41 00
DEMOLITION**

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 RELATED REQUIREMENTS

- A. Section 01 10 00 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 50 00 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 01 70 00 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

1.03 DEFINITIONS

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

1.04 REFERENCE STANDARDS

- A. 29 CFR 1926 - Safety and Health Regulations for Construction; Current Edition.
- B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

PART 3 EXECUTION

2.01 GENERAL PROCEDURES AND PROJECT CONDITIONS

- A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
 - 1. Obtain required permits.
 - 2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
 - 3. Provide, erect, and maintain temporary barriers and security devices.
 - 4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
 - 5. Do not close or obstruct roadways or sidewalks without permits from authority having jurisdiction.
 - 6. Conduct operations to minimize obstruction of public and private entrances and exits. Do not obstruct required exits at any time. Protect persons using entrances and exits from removal operations.
 - 7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon, or limit access to their property.
- B. Do not begin removal until receipt of notification to proceed from Owner.
- C. Do not begin removal until built elements to be salvaged or relocated have been removed.
- D. Protect existing structures and other elements to remain in place and not removed.

1. Provide bracing and shoring.
 2. Prevent movement or settlement of adjacent structures.
 3. Stop work immediately if adjacent structures appear to be in danger.
- E. Minimize production of dust due to demolition operations. Do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.
- F. Hazardous Materials:
1. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCBs, and mercury.

2.02 SELECTIVE DEMOLITION FOR ALTERATIONS

- A. Existing construction and utilities indicated on drawings are based on casual field observation and existing record documents only.
1. Verify construction and utility arrangements are as indicated.
 2. Report discrepancies to Architect before disturbing existing installation.
 3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.
- B. Separate areas in which demolition is being conducted from areas that remain occupied.
1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 50 00 in locations indicated on drawings.
- C. Remove existing work as indicated and required to accomplish new work.
1. Remove items indicated on drawings.
- D. Services including, but not limited to, HVAC, Plumbing, and Electrical: Remove existing systems and equipment as indicated.
1. Maintain existing active systems to remain in operation, and maintain access to equipment and operational components.
 2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
 3. See Section 01 10 00 - Summary for limitations on outages and required notifications.
 4. Verify that abandoned services serve only abandoned facilities before removal.
 5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings. Remove back to source of supply where possible, otherwise cap stub and tag with identification.
- E. Protect existing work to remain.
1. Prevent movement of structure. Provide shoring and bracing as required.
 2. Perform cutting to accomplish removal work neatly and as specified for cutting new work.
 3. Repair adjacent construction and finishes damaged during removal work.
 4. Patch to match new work.

2.03 DEBRIS AND WASTE REMOVAL

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 04 20 00
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete block.
- B. Mortar and grout.
- C. Reinforcement and anchorage.
- D. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 - Joint Sealants: Sealing control and expansion joints.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
 - 2. Special Shapes: Provide nonstandard blocks configured for corners.
 - a. Provide bullnose units for outside corners.
 - 3. Nonloadbearing Units: ASTM C129.
 - a. Hollow block, as indicated.
 - b. Lightweight.

2.02 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: ASTM C91/C91M, Type N.
- B. Portland Cement: ASTM C150/C150M, Type I; color as required to produce approved color sample.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Mortar Aggregate: ASTM C144.
- E. Grout Aggregate: ASTM C404.
- F. Water: Clean and potable.
- G. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
 - 1. Color: Standard gray.

2.03 REINFORCEMENT AND ANCHORAGE

- A. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

- B. Single Wythe Joint Reinforcement: ASTM A951/A951M.
- C. Strap Anchors: Bent steel shapes, 1-1/2 inch width, 0.105 inch thick, 24 inch length, with 1-1/2 inch long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M, Class B.
- D. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
- E. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.

2.04 MORTAR AND GROUT MIXING

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
 - 1. Interior, non-loadbearing masonry: Type O.
- B. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches.
- C. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.
- D. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches.
 - 3. Mortar Joints: Concave.

3.04 PLACING AND BONDING

- A. Lay hollow masonry units with face shell bedding on head and bed joints.
- B. Remove excess mortar and mortar smears as work progresses.
- C. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- D. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- E. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.

3.05 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHE MASONRY, AND CAVITY WALL MASONRY

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.

- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
- E. Lap joint reinforcement ends minimum 6 inches.
- F. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches on center.
- G. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.

3.06 GROUDED COMPONENTS

- A. Reinforce bond beams with 2, No. 5 bars, 1 inch from bottom web.
- B. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- C. Place and consolidate grout fill without displacing reinforcing.
- D. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

3.07 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control or expansion joints.
- B. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.
- C. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.

3.08 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames and glazed frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.09 TOLERANCES

- A. Install masonry within the site tolerances found in TMS 402/602.
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- D. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- F. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

3.10 CUTTING AND FITTING

- A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.11 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.

3.12 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

SECTION 06 10 53
MISCELLANEOUS ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concealed wood blocking, nailers, and supports.
- B. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

- A. Section 09 21 16 - Gypsum Board Assemblies: Gypsum-based sheathing.

1.03 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. PS 20 - American Softwood Lumber Standard; 2021.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Douglas Fir-Larch, unless otherwise indicated.
 - 2. If no species is specified, provide species graded by the agency specified; if no grading agency is specified, provide lumber graded by grading agency meeting the specified requirements.
 - 3. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
 - 4. Lumber of other species or grades is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

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

2.03 ACCESSORIES

- A. Fasteners and Anchors:
 - 1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
 - 2. Anchors: Toggle bolt type for anchorage to hollow masonry.

PART 3 EXECUTION

3.01 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

3.02 BLOCKING, NAILERS, AND SUPPORTS

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

- C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- E. Provide the following specific nonstructural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Grab bars.
 - 3. Towel and bath accessories.
 - 4. Wall-mounted door stops.
 - 5. Chalkboards and marker boards.

END OF SECTION

SECTION 07 21 00
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Batt insulation for filling interior wall cavities for sound separation.

1.02 DEFINITIONS

- A. Mineral Fiber Material Composition: Insulation referred to as mineral fiber block, board, and blanket insulation is composed of fibers from mineral based substances such as rock, slag, or glass and processed from the molten state into fibrous form.
 - 1. Based on type of insulation substance, the material will be referred to as a mineral fiber when having a rock or slag base, and glass fiber with a glass or silica sand base, also considered a mineral.
 - 2. Insulation blankets are flexible units consisting of felted, bonded, or unbonded fibers formed into rolls or flat cut pieces referred to as batts; rolls are simply longer versions of batts.
 - 3. For additional information about mineral fiber and the various classification types, refer to the following reference standards; ASTM C553, ASTM C612, ASTM C665, and ASTM C726.

1.03 REFERENCE STANDARDS

- A. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2013 (Reapproved 2019).
- B. ASTM C612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2014 (Reapproved 2019).
- C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2023.
- D. ASTM C726 - Standard Specification for Mineral Wool Roof Insulation Board; 2017.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- F. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2024.

1.04 SUBMITTALS

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

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation in Metal Framed Walls: Batt insulation with no vapor retarder.

2.02 MINERAL FIBER BLANKET INSULATION MATERIALS

- A. Flexible Glass Fiber Blanket Thermal Insulation: Preformed insulation, complying with ASTM C665; friction fit.
 - 1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
 - 2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
 - 4. Thickness: 3.5 inch.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

3.02 BATT INSTALLATION

- A. Install insulation in accordance with manufacturer's instructions.
- B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 FIELD QUALITY CONTROL

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

3.04 PROTECTION

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

END OF SECTION

SECTION 07 92 00
JOINT SEALANTS

PART 1 GENERAL

1.01 SECTION INCLUDES

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

1.02 RELATED REQUIREMENTS

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

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's technical datasheets for each product to be used; include the following:
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Backing material recommended by sealant manufacturer.
 - 4. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 5. Substrates the product should not be used on.
 - 6. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 7. Sample product warranty.
 - 8. Certification by manufacturer indicating that product complies with specification requirements.
- C. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- D. Preconstruction Laboratory Test Reports: Submit at least four weeks prior to start of installation.
- E. Executed warranty.

1.04 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
- D. Preconstruction Laboratory Testing: Arrange for sealant manufacturer(s) to test each combination of sealant, substrate, backing, and accessories.
 - 1. Adhesion Testing: In accordance with ASTM C794.
 - 2. Compatibility Testing: In accordance with ASTM C1087.
 - 3. Allow sufficient time for testing to avoid delaying the work.
 - 4. Deliver sufficient samples to manufacturer for testing.
 - 5. Report manufacturer's recommended corrective measures, if any, including primers or techniques not indicated in product data submittals.

1.05 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.

- B. Manufacturer Warranty: Provide 2-year manufacturer warranty for installed sealants and accessories that fail to achieve a watertight seal, exhibit loss of adhesion or cohesion, or do not cure. Complete forms in Owner's name and register with manufacturer.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Nonsag Sealants:
 - 1. Dow; _____: www.dow.com/#sle.
 - 2. Pecora Corporation; _____: www.pecora.com/#sle.
 - 3. Sika Corporation; _____: www.usa.sika.com/#sle.
 - 4. Tremco Commercial Sealants & Waterproofing; _____: www.tremcosealants.com/#sle.
 - 5. Substitutions: See Section 01 60 00 - Product Requirements.

2.02 JOINT SEALANT APPLICATIONS

- A. Scope:
 - 1. Interior Joints:
 - a. Do not seal interior joints indicated on drawings as not sealed.
 - b. Do not seal gaps and openings in gypsum board and suspended ceilings
 - c. Seal open joints except specific open joints indicated on drawings as not sealed.

2.03 JOINT SEALANTS - GENERAL

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

2.04 ACCESSORIES

- A. Sealant Backing Materials, General: Materials placed in joint before applying sealants; assists sealant performance and service life by developing optimum sealant profile and preventing three-sided adhesion; type and size recommended by sealant manufacturer for compatibility with sealant, substrate, and application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.

3.02 PREPARATION

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

3.03 INSTALLATION

- A. Install this work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Provide joint sealant installations complying with ASTM C1193.
- C. Install bond breaker backing tape where backer rod cannot be used.
- D. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- E. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.

- F. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

END OF SECTION

SECTION 08 12 13
HOLLOW METAL FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Non-fire-rated hollow metal frames for non-hollow metal doors.
- B. Fire-rated hollow metal frames for non-hollow metal doors.
- C. Interior glazed borrowed lite frames.

1.02 RELATED REQUIREMENTS

- A. Section 08 14 16 - Flush Wood Doors: Non-hollow metal door for hollow metal frames.
- B. Section 08 71 00 - Door Hardware: Hardware, silencers, and weatherstripping.
- C. Section 08 80 00 - Glazing: Glazed borrowed lites.
- D. Section 09 91 23 - Interior Painting: Field painting.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2023.
- C. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2020.
- D. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable; 2023, with Editorial Revision.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2023.
- H. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2020.
- I. ASTM C476 - Standard Specification for Grout for Masonry; 2023.
- J. BHMA A156.115 - Hardware Preparation in Steel Doors and Frames; 2016.
- K. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2017.
- L. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- M. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- N. NAAMM HMMA 840 - Guide Specifications for Receipt, Storage and Installation of Hollow Metal Doors and Frames; 2024.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.
- D. Manufacturer's qualification statement.
- E. Installer's qualification statement.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store in accordance with applicable requirements and in compliance with standards and/or custom guidelines as indicated.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion.

PART 2 PRODUCTS

2.01 PERFORMANCE REQUIREMENTS

- A. Hollow Metal Frames: Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of side hinged doors.
- B. Design Pressure (DP): In accordance with ASCE 7.
- C. Refer to Door and Frame Schedule on drawings for frame sizes, fire ratings, sound ratings, finishing, door hardware to be installed, and other variations, if any.
- D. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
- E. Accessibility: Comply with ICC A117.1 and ADA Standards.
- F. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturers standard.
- G. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior frame that is also indicated as being sound-rated must comply with the requirements specified for exterior frames and for sound-rated frames; where two requirements conflict, comply with the most stringent.
- H. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115, NAAMM HMMA 830, NAAMM HMMA 831 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- I. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- J. Transom Bars: Fixed, of profile same as jamb and head.
- K. Frames for Interior Glazing or Borrowed Lites: Construction and face dimensions to match door frames, and as indicated on drawings.
- L. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.

2.02 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.

2.03 ACCESSORIES

- A. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- B. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

- A. Install frames in accordance with manufacturer's instructions and related requirements of specified frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- D. Comply with glazing installation requirements of Section 08 80 00.
- E. Install door hardware as specified in Section 08 71 00.

3.04 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 inch measured with straight edges, crossed corner to corner.

3.05 SCHEDULE

- A. Refer to Door and Frame Schedule on the drawings.

END OF SECTION

SECTION 08 14 16
FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Flush wood doors; flush and flush glazed configuration; fire-rated and non-rated.
- B. Transom panels.

1.02 RELATED REQUIREMENTS

- A. Section 08 12 13 - Hollow Metal Frames.
- B. Section 08 71 00 - Door Hardware.
- C. Section 08 80 00 - Glazing.
- D. Section 09 21 16 - Gypsum Board Assemblies: Bullet-resistant sheathing and wallboard for bullet-resistant partitions and walls.
- E. Section 09 91 23 - Interior Painting: Field finishing of doors.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- D. Warranty, executed in Owner's name.

1.04 QUALITY ASSURANCE

- A. Maintain one copy of the specified door quality standard on site for review during installation and finishing.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Manufacturer Warranty: Provide manufacturer's warranty on interior doors for the life of the installation. Complete forms in Owner's name and register with manufacturer.
 - 1. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Wood Veneer Faced Doors:
 - 1. USA Wood Door; www.usawooddoor.com, Howell, MI 1.866.996.9644.

2.02 DOORS AND PANELS

- A. Doors: See drawings for locations and additional requirements.

1. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
 1. Provide solid core doors at each location.
 2. Wood veneer facing with factory transparent finish as indicated on drawings.

2.03 DOOR AND PANEL CORES

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated.

2.04 DOOR FACINGS

- A. Veneer Facing for Transparent Finish: White birch, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, balance match of spliced veneer leaves assembled on door or panel face.
 1. Vertical Edges: Any option allowed by quality standard for grade.
 2. Transoms: Continuous match to doors.

2.05 DOOR CONSTRUCTION

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
 1. Provide solid blocks at lock edge for hardware reinforcement.
 2. Provide solid blocking for other throughbolted hardware.
- C. Where supplementary protective edge trim is required, install trim after veneer facing has been applied full-width.
- D. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- E. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- F. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- G. Provide edge clearances in accordance with the quality standard specified.

2.06 FINISHES - WOOD VENEER DOORS

- A. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
- B. Factory finish doors in accordance with approved sample.
- C. Seal door top edge with color sealer to match door facing.

2.07 ACCESSORIES

- A. Hollow Metal Door Frames: See Section 08 11 13.
- B. Glazed Openings:
 1. Heat-Strengthened and Fully Tempered Glass: ASTM C1048.
 2. Laminated Glass: Float glass laminated in accordance with ASTM C1172.
- C. Door Window Frames: Door window frames with glazing securely fastened within door opening.
 1. Size: As indicated on drawings.
 2. Frame Material: 18 gauge, 0.0478 inch, galvanized steel.
 3. Metal Finish: Beige polyester powder coating.
 4. Glazing: 1/4 inch thick, tempered glass, in compliance with requirements of authorities having jurisdiction.
- D. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that 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.

3.02 INSTALLATION

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.

3.03 TOLERANCES

- A. Comply with specified quality standard for fit and clearance tolerances.
- B. Comply with specified quality standard for telegraphing, warp, and squareness.

3.04 ADJUSTING

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

END OF SECTION

**SECTION 087100
DOOR HARDWARE**

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Mechanical and electrified door hardware

- B. Section excludes:
 - 1. Windows
 - 2. Cabinets (casework), including locks in cabinets
 - 3. Signage
 - 4. Toilet accessories
 - 5. Overhead doors

- C. Related Sections:
 - 1. Division 01 "General Requirements" sections for Allowances, Alternates, Owner Furnished Contractor Installed, Project Management and Coordination.
 - 2. Division 06 Section "Rough Carpentry"
 - 3. Division 06 Section "Finish Carpentry"
 - 4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
 - 5. Division 08 Sections:
 - a. "Metal Doors and Frames"
 - b. "Flush Wood Doors"
 - c. "Stile and Rail Wood Doors"
 - d. "Interior Aluminum Doors and Frames"
 - e. "Aluminum-Framed Entrances and Storefronts"

1.02 REFERENCES

- A. UL LLC
 - 1. UL 10B - Fire Test of Door Assemblies
 - 2. UL 10C - Positive Pressure Test of Fire Door Assemblies
 - 3. UL 1784 - Air Leakage Tests of Door Assemblies
 - 4. UL 305 - Panic Hardware

- B. DHI - Door and Hardware Institute
 - 1. Sequence and Format for the Hardware Schedule
 - 2. Recommended Locations for Builders Hardware
 - 3. Keying Systems and Nomenclature
 - 4. Installation Guide for Doors and Hardware

- C. NFPA – National Fire Protection Association
 - 1. NFPA 70 – National Electric Code

2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
3. NFPA 101 – Life Safety Code
4. NFPA 105 – Smoke and Draft Control Door Assemblies
5. NFPA 252 – Fire Tests of Door Assemblies

D. ANSI - American National Standards Institute

1. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
2. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
3. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
4. ANSI/SDI A250.8 - Standard Steel Doors and Frames

1.03 SUBMITTALS

A. General:

1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
2. Prior to forwarding submittal:
 - a. Review drawings and Sections from related trades to verify compatibility with specified hardware.
 - b. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.

B. Action Submittals:

1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
2. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
 - a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
3. Door Hardware Schedule:
 - a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
 - b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
 - c. Indicate complete designations of each item required for each opening, include:
 - 1) Door Index: door number, heading number, and Architect's hardware set number.
 - 2) Quantity, type, style, function, size, and finish of each hardware item.
 - 3) Name and manufacturer of each item.
 - 4) Fastenings and other pertinent information.
 - 5) Location of each hardware set cross-referenced to indications on Drawings.
 - 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
 - 7) Mounting locations for hardware.
 - 8) Door and frame sizes and materials.

9) Degree of door swing and handing.

4. Key Schedule:

- a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
- b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
- c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
- d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
- e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
- f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.

C. Informational Submittals:

1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
2. Provide Product Data:
 - a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
 - b. Include warranties for specified door hardware.

D. Closeout Submittals:

1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
 - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
 - b. Catalog pages for each product.
 - c. Final approved hardware schedule edited to reflect conditions as installed.
 - d. Final keying schedule
 - e. Copy of warranties including appropriate reference numbers for manufacturers to identify project.

E. Inspection and Testing:

1. Submit written reports to the Owner and Authority Having Jurisdiction (AHJ) of the results of functional testing and inspection for:
 - a. Fire door assemblies, in compliance with NFPA 80.
 - b. Required egress door assemblies, in compliance with NFPA 101.

1.04 QUALITY ASSURANCE

A. Qualifications and Responsibilities:

1. Supplier: Recognized architectural hardware supplier with a minimum of 5 years documented experience supplying both mechanical and electromechanical door hardware similar in quantity, type, and quality to that indicated for this Project. Supplier to be recognized as a factory direct distributor by the manufacturer of the primary materials with a warehousing facility in the Project's vicinity. Supplier to have on staff, a certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
 - a. For door hardware: DHI certified AHC or DHC.
 - b. Can provide installation and technical data to Architect and other related subcontractors.
 - c. Can inspect and verify components are in working order upon completion of installation.
4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

B. Certifications:

1. Fire-Rated Door Openings:
 - a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
 - b. Provide only items of door hardware that are listed products tested by UL LLC, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
2. Smoke and Draft Control Door Assemblies:
 - a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
 - b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
3. Accessibility Requirements:
 - a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.

C. Pre-Installation Meetings

1. Keying Conference
 - a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
 - 1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
 - 2) Preliminary key system schematic diagram.
 - 3) Requirements for key control system.
 - 4) Requirements for access control.
 - 5) Address for delivery of keys.

2. Pre-installation Conference
 - a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Inspect and discuss preparatory work performed by other trades.
 - c. Inspect and discuss electrical roughing-in for electrified door hardware.
 - d. Review sequence of operation for each type of electrified door hardware.
 - e. Review required testing, inspecting, and certifying procedures.
 - f. Review questions or concerns related to proper installation and adjustment of door hardware.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.
- C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

1.06 COORDINATION

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

1.07 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
 1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.

2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
 - a. Mechanical Warranty
 - 1) Locks
 - a) Schlage L Series: 10 years
 - 2) Exit Devices
 - a) Von Duprin: 10 years
 - 3) Closers
 - a) LCN 4000 Series: 30 years
 - 4) Automatic Operators
 - a) LCN: 2 years
 - b. Electrical Warranty
 - 1) Locks
 - a) Schlage: 3 years

1.08 MAINTENANCE

- A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
- B. Turn over unused materials to Owner for maintenance purposes.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Approval of alternate manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category are only to be considered by official substitution request in accordance with section 01 25 00.
- B. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

2.02 MATERIALS

- A. Fabrication
 1. Provide door hardware manufactured to comply with published templates generally prepared for machine, wood, and sheet metal screws. provide screws according to manufacturer's recognized installation standards for application intended.
 2. Finish exposed screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.

3. Provide concealed fasteners wherever possible for hardware units exposed when door is closed. Coordinate with "Metal Doors and Frames", "Flush Wood Doors", "Stile and Rail Wood Doors" to ensure proper reinforcements. Advise the Architect where visible fasteners, such as thru bolts, are required.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

2.03 HINGES

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Ives 5BB series
2. Acceptable Manufacturers and Products:
 - a. Hager BB1191/1279 series
 - b. McKinney TB series

B. Requirements:

1. Provide hinges conforming to ANSI/BHMA A156.1.
2. Provide five knuckle, ball bearing hinges.
3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
 - a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
 - b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
 - a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
5. 2 inches or thicker doors:
 - a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
 - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
8. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
 - a. Steel Hinges: Steel pins
 - b. Non-Ferrous Hinges: Stainless steel pins
 - c. Out-Swinging Exterior Doors: Non-removable pins
 - d. Out-Swinging Interior Lockable Doors: Non-removable pins
 - e. Interior Non-lockable Doors: Non-rising pins
9. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

2.04 MORTISE LOCKS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. Schlage L9000 Series

B. Requirements:

1. Provide mortise locks conforming to ANSI/BHMA A156.13 Series 1000, Grade 1, and UL Listed for 3-hour fire doors.
2. Indicators: Where specified, provide indicator window measuring a minimum 2-3/5-inch x 3/5 inch with 180-degree visibility. Provide messages color-coded using ANSI Z535 Safety Red with full text and/or symbols, as scheduled, for easy visibility. When applicable allows for lock status indication on both sides of the door.
3. Provide locks manufactured from heavy gauge steel, containing components of steel with a zinc dichromate plating for corrosion resistance.
4. Provide lock case that is multi-function and field reversible for handing without opening case. Cylinders: Refer to "KEYING" article, herein.
5. Provide locks with standard 2-3/4 inches (70 mm) backset with full 3/4 inch (19 mm) throw stainless steel mechanical anti-friction latchbolt. Provide deadbolt with full 1-inch (25 mm) throw, constructed of stainless steel.
6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim. Provide electrified options as scheduled in the hardware sets. Where scheduled, provide switches and sensors integrated into the locks and latches.
7. Provide motor based electrified locksets that comply with the following requirements:
 - a. Universal input voltage – single chassis accepts 12 or 24VDC to allow for changes in the field without changing lock chassis.
 - b. Fail Safe/Fail Secure – changing mode between electrically locked (fail safe) and electrically unlocked (fail secure) is field selectable without opening the lock case.
 - c. Low maximum current draw – maximum 0.4 amps to allow for multiple locks on a single power supply.
 - d. Low holding current – maximum 0.01 amps to produce minimal heat, eliminate “hot levers” in electrically locked applications, and to provide reliable operation in wood doors that provide minimal ventilation and air flow.
 - e. Connections – provide quick-connect Molex system standard.
8. Lever Trim: Solid brass, bronze, or stainless steel, cast or forged in design specified, with wrought roses and external lever spring cages. Provide thru-bolted levers with 2-piece spindles.
 - a. Lever Design: <SPA>.

2.05 ELECTRONIC ACCESS CONTROL LOCKSETS AND EXIT DEVICE TRIM

A. Manufacturers:

1. Scheduled Manufacturer and Product:
 - a. Schlage CO Series

B. Requirements:

1. Provide offline electronic access control products that comply with the following requirements:
 - a. Listed, UL 294 - The Standard of Safety for Access Control System Units.
 - b. Compliant with ANSI/BHMA A156.25 Grade 1 Operation and Security.
 - c. Certified to UL10C, FCC Part15, Florida Building Code Standards TAS 201 large missile impact, TAS 202 and TAS 203.

- d. Compliant with ASTM E330 for door assemblies.
 - e. Compliant with ICC / ANSI A117.1, NFPA 101, NFPA 80, and Industry Canada RSS-210.
2. Functions: Provide functions as scheduled that are field configurable without taking the offline electronic product off the door.
 3. Emergency Override: Provide mechanical key override; cylinders: Refer to "KEYING" article, herein.
 4. Levers:
 - a. Vandal Resistance: Exterior (secure side) lever rotates freely while door remains locked, preventing damage to internal lock components from vandalism by excessive force.
 - b. Provide pressure cast zinc plated, non-handed lever trim that operates independently of non-locking levers.
 - c. Style: <SPA>.
 5. Power Supply: 4 AA batteries
 - a. Provide electronic access control locks and/or exit device trim with the ability to communicate battery status.
 6. Features:
 - a. Visual tri-colored LED indicators that indicate activation, operational systems status, system error conditions and low power conditions.
 - b. Visual bi-colored LED indicator on interior that can indicate secured/unsecured status of device to occupants on interior.
 - c. Audible feedback that can be enabled or disabled.
 - d. Onboard processor with memory capacity of 2,000 event audit history, up to 16 time zones and up to 32 calendar events.
 - e. Central verification time of less than 1 second
 - f. Tamper-Resistant Screws: Tamper torx screws on inside escutcheon for increased security.
 7. Access:
 - a. Programmable Keypad
 - 1) 3-6-digit PIN code and 12 backlit buttons in a 3 x 4 matrix.
 8. Operation:
 - a. Provide electronic access control locks and/or exit device trim with the ability to be configured at door by handheld programming device the length of time device is unlocked upon access grant.
 - b. Provide electronic access control locks and/or exit device trim with the ability to communicate identifying information such as firmware versions, hardware versions, serial numbers, and manufacturing dates by handheld programming device.

2.06 CYLINDERS

- A. Manufacturers:
 1. Scheduled Manufacturer and Product:
 - a. CORBIN RUSSWIN 591C
 2. Acceptable Manufacturers and Products:
 - a. No Substitute
- B. Requirements:

1. Provide cylinders/cores to match Owner's existing key system, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.

2.07 KEYING

A. Scheduled System:

1. Existing factory registered system:
 - a. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.

B. Requirements:

1. Construction Keying:
 - a. Temporary Construction Cylinder Keying.
 - 1) Provide construction cores that permit voiding construction keys without cylinder removal, furnished in accordance with the following requirements.
 - a) Split Key or Lost Ball Construction Keying System.
 - b) 3 construction control keys, and extractor tools or keys as required to void construction keying.
 - c) 12 construction change (day) keys.
 - 2) Owner or Owner's Representative will void operation of temporary construction keys.
2. Permanent Keying:
 - a. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
 - 1) Master Keying system as directed by the Owner.
 - b. Forward biting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
 - c. Provide keys with the following features:
 - 1) Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
 - 2) Patent Protection: Keys and blanks protected by one or more utility patent(s).
 - d. Identification:
 - 1) Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
 - 2) Identification stamping provisions must be approved by the Architect and Owner.
 - 3) Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
 - 4) Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.
 - 5) Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
 - e. Quantity: Furnish in the following quantities.
 - 1) Permanent Control Keys: 3.
 - 2) Master Keys: 6.
 - 3) Change (Day) Keys: 3 per cylinder/core that is keyed differently
 - 4) Key Blanks: Quantity as determined in the keying meeting.

2.08 KEY CONTROL SYSTEM

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Telkee
2. Acceptable Manufacturers:
 - a. HPC
 - b. Lund

B. Requirements:

1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
 - a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
 - b. Provide hinged-panel type cabinet for wall mounting.

2.09 DOOR CLOSERS

A. Manufacturers and Products:

1. Scheduled Manufacturer and Product:
 - a. LCN 4010/4110/4020 series

B. Requirements:

1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. Certify surface mounted mechanical closers to meet fifteen million (15,000,000) full load cycles. ISO 9000 certify closers. Stamp units with date of manufacture code.
2. Provide door closers with fully hydraulic, full rack and pinion action with high strength cast iron cylinder, and full complement bearings at shaft.
3. Cylinder Body: 1-1/2-inch (38 mm) diameter with 11/16-inch (17 mm) diameter double heat-treated pinion journal.
4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and backcheck.
7. Provide closers with solid forged steel main arms and factory assembled heavy-duty forged forearms for parallel arm closers. When closers are parallel arm mounted, provide closers which mount within 6-inch (152 mm) top rail without use of mounting plate so that closer is not visible through vision panel from pull side.
8. Pressure Relief Valve (PRV) Technology: Not permitted.
9. Finish for Closer Cylinders, Arms, Adapter Plates, and Metal Covers: Powder coating finish which has been certified to exceed 100 hours salt spray testing as described in ANSI/BHMA Standard A156.4 and ASTM B117, or has special rust inhibitor (SRI).
10. Provide special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

2.10 DOOR TRIM

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

2.11 PROTECTION PLATES

A. Manufacturers:

1. Scheduled Manufacturer:
 - a. Ives
2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco

B. Requirements:

1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
2. Sizes plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
3. At fire rated doors, provide protection plates over 16 inches high with UL label.

2.12 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS

A. Manufacturers:

1. Scheduled Manufacturers:
 - a. Glynn-Johnson
2. Acceptable Manufacturers:
 - a. Rixson
 - b. Sargent

B. Requirements:

1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.

2.13 DOOR STOPS AND HOLDERS

- A. Manufacturers:
 - 1. Scheduled Manufacturer:
 - a. Ives
 - 2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco
- B. Provide door stops at each door leaf:
 - 1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
 - 2. Where a wall stop cannot be used, provide universal floor stops.
 - 3. Where wall or floor stop cannot be used, provide overhead stop.
 - 4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

2.14 SILENCERS

- A. Manufacturers:
 - 1. Scheduled Manufacturer:
 - a. Ives
 - 2. Acceptable Manufacturers:
 - a. Burns
 - b. Trimco
- B. Requirements:
 - 1. Provide "push-in" type silencers for hollow metal or wood frames.
 - 2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
 - 3. Omit where gasketing is specified.

2.15 FINISHES

- A. FINISH: BHMA 626/652 (US26D); EXCEPT:
 - 1. Hinges at Exterior Doors: BHMA 630 (US32D)
 - 2. Aluminum Geared Continuous Hinges: BHMA 628 (US28)
 - 3. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
 - 4. Protection Plates: BHMA 630 (US32D)
 - 5. Overhead Stops and Holders: BHMA 630 (US32D)
 - 6. Door Closers: Powder Coat to Match
 - 7. Wall Stops: BHMA 630 (US32D)
 - 8. Latch Protectors: BHMA 630 (US32D)
 - 9. Weatherstripping: Clear Anodized Aluminum
 - 10. Thresholds: Mill Finish Aluminum

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
 - 1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
 - 2. Custom Steel Doors and Frames: HMMA 831.
 - 3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
 - 4. Installation Guide for Doors and Hardware: DHI TDH-007-20
- B. Install door hardware in accordance with NFPA 80, NFPA 101 and provide post-install inspection, testing as specified in section 1.03.E unless otherwise required to comply with governing regulations.
- C. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- D. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- E. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- F. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- G. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- H. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- I. Lock Cylinders:
 - 1. Install construction cores to secure building and areas during construction period.
 - 2. Replace construction cores with permanent cores as indicated in keying section.
 - 3. Furnish permanent cores to Owner for installation.

- J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- K. Continuous Hinges: Re-locate the door and frame fire rating labels where they will remain visible so that the hinge does not cover the label once installed.
- L. Door Closers & Auto Operators: Mount closers/operators on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers/operators so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
- M. Overhead Stops/holders: Mount overhead stops/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- R. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

3.03 ADJUSTING

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
 - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

3.04 CLEANING AND PROTECTION

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

3.05 DOOR HARDWARE SCHEDULE

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
- B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a hardware set should be scheduled with the appropriate additional hardware required for proper application.
- C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.
- D. Hardware Sets:

Hardware Group No. 01

For use on Door #(s):

X01 X02 X07 X11 X19

Provide each SGL door(s) with the following:

QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
	NOTE:	EXISTING TO REMAIN (NO WORK NEEDED)		

Hardware Group No. 02

For use on Door #(s):

101 102 116 121

Provide each SGL door(s) with the following:







QTY	DESCRIPTION	CATALOG NUMBER	FINISH	MFR
3	EA HINGE	5BB1 4.5 X 4.5	652	IVE
1	EA OFFICE/ENTRY LOCK	L9050L 17N L583-363	626	SCH
1	EA MORTIS CYLINDER	KEYED TO EXISTING SYSTEM (CORBIN-RUSSWIN)		
1	EA SURFACE CLOSER	4011	689	LCN
	EA NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ		
1	EA KICK PLATE	8400 10" X 2" LDW B-CS	630	IVE
1	EA WALL STOP	WS406/407CCV	630	IVE
3	EA SILENCER	SR64	GRY	IVE

Hardware Group No. 03

For use on Door #(s):

117A 117B 118

Provide each SGL door(s) with the following:





QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050L 17N L583-363		626	SCH
1	EA	MORTIS CYLINDER	KEYED TO EXISTING SYSTEM (CORBIN-RUSSWIN)			
1	EA	OVERHEAD STOP	100S		689	GLY
1	EA	SURFACE CLOSER	4011 ST-1544		689	LCN
	EA	NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ			
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 04

For use on Door #(s):

103

Provide each SGL door(s) with the following:







QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	OFFICE/ENTRY LOCK	L9050L 17N L583-363		626	SCH
1	EA	MORTIS CYLINDER	KEYED TO EXISTING SYSTEM (CORBIN-RUSSWIN)			
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 05

For use on Door #(s):

120

Provide each SGL door(s) with the following:







QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	STOREROOM LOCK	L9080L 17N		626	SCH
1	EA	MORTIS CYLINDER	KEYED TO EXISTING SYSTEM (CORBIN-RUSSWIN)			
1	EA	SURFACE CLOSER	4011		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 06

For use on Door #(s):

112 113

Provide each SGL door(s) with the following:






QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	L9040 17N 09-544 OS-OCC		626	SCH
1	EA	SURFACE CLOSER	4011		689	LCN
1	EA	NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ			
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 07

For use on Door #(s):

111

Provide each SGL door(s) with the following:







QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PRIVACY LOCK W/ OUTSIDE INDICATOR	L9040 17N L583-363 OS-OCC		626	SCH
1	EA	SURFACE CLOSER	4111 SCUSH		689	LCN
1	EA	NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ			
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 08

For use on Door #(s):

108

Provide each SGL door(s) with the following:







QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PASSAGE SET	L9010 17N		626	SCH
1	EA	SURFACE CLOSER	4111 SCUSH		689	LCN
1	EA	NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ			
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 09

For use on Door #(s):

114

Provide each SGL door(s) with the following:








QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5		652	IVE
1	EA	PASSAGE SET	L9010 17N		626	SCH
1	EA	SURFACE CLOSER	4011		689	LCN
1	EA	NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ			
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 10

For use on Door #(s):

110

Provide each SGL door(s) with the following:







QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1HW 4.5 X 4.5		652	IVE
1	EA	PUSH PLATE	8200 4" X 16"		630	IVE
1	EA	PULL PLATE	8303 10" 4" X 16" F		630	IVE
1	EA	SURFACE CLOSER	4011		689	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
3	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 11

For use on Door #(s):

119







Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	ELEC CLASSROOM LOCK	CO-100-MS-70-KP-SPA-J 4B BATTERY OPERATED		626	SCE
1	EA	MORTIS CYLINDER	KEYED TO EXISTING SYSTEM (CORBIN-RUSSWIN)			
1	EA	SURFACE CLOSER	4011		689	LCN
1	EA	NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ			
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	SILENCER	SR64		GRY	IVE

Hardware Group No. 12

For use on Door #(s):
S01

Provide each SGL door(s) with the following:

QTY		DESCRIPTION	CATALOG NUMBER		FINISH	MFR
3	EA	HINGE	5BB1 4.5 X 4.5 NRP		652	IVE
1	EA	ELEC CLASSROOM LOCK	CO-100-MS-70-KP-SPA-J 4B		↗ 626	SCE
			BATTERY OPERATED			
1	EA	MORTIS CYLINDER	KEYED TO EXISTING SYSTEM (CORBIN-RUSSWIN)			
1	EA	SURFACE CLOSER	4111 EDA		689	LCN
1	EA	NOTE:	CLOSER MTG BRKT, SPCR & PLATE AS REQ			
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS		630	IVE
1	EA	WALL STOP	WS406/407CCV		630	IVE
1	EA	SILENCER	SR64		GRY	IVE

END OF SECTION

SECTION 08 80 00

GLAZING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glazing units.
- B. Glazing compounds.

1.02 RELATED REQUIREMENTS

- A. Section 08 12 13 - Hollow Metal Frames: Glazed borrowed lites.
- B. Section 08 52 00 - Wood Windows: Glazing provided by window manufacturer.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data on Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.
- D. Manufacturer's qualification statement.
- E. Installer's qualification statement.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.

1.05 FIELD CONDITIONS

- A. Do not install glazing when ambient temperature is less than 40 degrees F.
- B. Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.

PART 2 PRODUCTS

2.01 GLASS MATERIALS

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

2.02 GLAZING UNITS

- A. Type G-2 - Monolithic Interior Vision Glazing:
 - 1. Applications: Interior glazing unless otherwise indicated.
 - 2. Glass Type: Annealed float glass.
 - 3. Tint: Clear.
 - 4. Thickness: 1/4 inch, nominal.

2.03 ACCESSORIES

- A. Setting Blocks: Silicone, with 80 to 90 Shore A durometer hardness; ASTM C864 Option II. Length of 0.1 inch for each square foot of glazing or minimum 4 inch by width of glazing rabbet space minus 1/16 inch by height to suit glazing method and pane weight and area.
- B. Spacer Shims: Neoprene, 50 to 60 Shore A durometer hardness; ASTM C864 Option II. Minimum 3 inch long by one half the height of the glazing stop by thickness to suit application, self adhesive on one face.

- C. Glazing Tape, Back Bedding Mastic Type: Preformed, butyl-based, 100 percent solids compound with integral resilient spacer rod applicable to application indicated; 5 to 30 cured Shore A durometer hardness; coiled on release paper; black color.

PART 3 EXECUTION

3.01 VERIFICATION OF CONDITIONS

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.
- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

3.02 INSTALLATION, GENERAL

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

3.03 INSTALLATION - DRY GLAZING METHOD (TAPE AND TAPE)

- A. Application - Interior Glazed: Set glazing infills from the interior of the building.
- B. Cut glazing tape to length and set against permanent stops, projecting 1/16 inch above sight line.
- C. Place setting blocks at 1/4 points with edge block no more than 6 inch from corners.
- D. Rest glazing on setting blocks and push against tape for full contact at perimeter of pane or unit.
- E. Place glazing tape on free perimeter of glazing in same manner described above.
- F. Install removable stop without displacement of tape. Exert pressure on tape for full continuous contact.
- G. Carefully trim protruding tape with knife.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements for additional requirements.
- B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
- C. Monitor and report installation procedures and unacceptable conditions.

3.05 CLEANING

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

3.06 PROTECTION

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.

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

END OF SECTION

SECTION 09 21 16
GYP SUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Cementitious backing board.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Building framing.
- B. Section 07 21 00 - Thermal Insulation: Acoustic insulation.
- C. Section 07 92 00 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
- D. Section 09 22 16 - Non-Structural Metal Framing.
- E. Section 09 30 00 - Tiling: Tile backing board.

1.03 REFERENCE STANDARDS

- A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units; 2023.
- B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 2023.
- C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2017 (Reapproved 2022).
- D. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2023.
- E. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.
- F. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base; 2019.
- G. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units; 2022, with Editorial Revision (2023).
- H. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2017.
- I. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2021.
- J. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2023.
- K. ASTM E413 - Classification for Rating Sound Insulation; 2022.
- L. GA-216 - Application and Finishing of Gypsum Panel Products; 2024.
- M. UL (FRD) - Fire Resistance Directory; Current Edition.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data:
 - 1. Provide data on gypsum board, accessories, and joint finishing system.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store gypsum products and accessories indoors and keep above freezing. Elevate boards above floor, on nonwicking supports, in accordance with manufacturer's recommendations.

- B. Store metal products to prevent corrosion.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Interior Partitions: Provide completed assemblies with the following characteristics:
 - 1. Acoustic Attenuation: STC of 45-49 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- C. Fire-Resistance-Rated Assemblies: Provide completed assemblies with the following characteristics:
 - 1. Fire-Resistance-Rated Partitions: UL listed assembly No. 419; 1 hour rating.
 - 2. UL Assembly Numbers: Provide construction equivalent to that listed for the particular assembly in the current UL (FRD).

2.02 BOARD MATERIALS

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for vertical surfaces, unless otherwise indicated.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - a. Mold resistant board is required Restroom.
 - 3. Thickness:
- B. Backing Board For Wet Areas: One of the following products:
 - 1. Application: Surfaces behind tile in wet areas, including shower ceilings and wet walls adjacent to water closet.
 - 2. Application: Horizontal surfaces behind tile in wet areas including water closet .
 - 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 4. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
 - a. Thickness: 5/8 inch.

2.03 GYPSUM BOARD ACCESSORIES

- A. Acoustic Insulation: See Section 07 21 00.
- B. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic or galvanized steel, unless noted otherwise.
 - 1. Corner Beads: Low profile, for 90 degree outside corners.
 - 2. L-Trim with Tear-Away Strip: Sized to fit 1/2-inch thick gypsum wallboard.
- C. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
- D. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
 - 1. Exception: Tapered edges to receive joint treatment at right angles to framing.

- C. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.
- D. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.
- E. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

3.03 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

3.04 JOINT TREATMENT

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.
 - 2. Taping, filling, and sanding are not required at surfaces behind adhesive applied ceramic tile and fixed cabinetry.

3.05 TOLERANCES

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

3.06 PROTECTION

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

END OF SECTION

SECTION 09 22 16
NON-STRUCTURAL METAL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Metal partition framing.
- B. Framing accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Wood blocking within stud framing.
- B. Section 07 21 00 - Thermal Insulation: Acoustic insulation.
- C. Section 07 92 00 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

- A. AISI S220 - North American Standard for Cold-Formed Steel Nonstructural Framing; 2020.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- C. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories; 2020.
- D. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2022.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Shop Drawings:
 - 1. Indicate component details, stud layout, anchorage to structure, type and location of fasteners, accessories, and items of other related work.
 - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.
- C. Product Data: Provide data describing framing member materials and finish, product criteria, and limitations.
- D. Manufacturer's Installation Instructions: Indicate special procedures.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Member of Steel Stud Manufacturers Association (SSMA): www.ssmma.com/#sle.

PART 2 PRODUCTS

2.01 FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: AISI S220; sheet steel, of size and properties necessary for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
 - 1. Studs: C-shaped with flat faces.
 - 2. Runners: U-shaped, sized to match studs.
 - 3. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
- B. Partition Head to Structure Connections: Provide track fastened to structure with legs of sufficient length to accommodate deflection, for friction fit of studs cut short and braced with continuous bridging on both sides.
- C. Non-Loadbearing Framing Accessories:
 - 1. Bracing and Bridging: ASTM A653/A653M G90 galvanized steel; for lateral bracing of wall studs with slots for engaging on-module studs.
 - 2. Framing Connectors: ASTM A653/A653M steel clips; secures cold rolled channel to wall studs for lateral bracing.

3. Sheet Metal Backing: 0.0395 inch thick.
4. Fasteners: ASTM C1002 self-piercing self-tapping screws.
5. Anchorage Devices: Powder actuated.
6. Acoustic Insulation: See Section 07 21 00.

2.02 FABRICATION

- A. Fabricate assemblies of framed sections to sizes and profiles required.
- B. Fit, reinforce, and brace framing members to suit design requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that rough-in utilities are in proper location.

3.02 INSTALLATION OF STUD FRAMING

- A. Comply with requirements of ASTM C1007.
- B. Extend partition framing to structure where indicated and to ceiling in other locations.
- C. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
- D. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.
- E. Align and secure top and bottom runners at 24 inches on center.
- F. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- G. Install studs vertically at 16 inches on center.
- H. Align stud web openings horizontally.
- I. Secure studs to tracks using crimping method. Do not weld.
- J. Stud splicing is permissible; splice studs with 8 inch nested lap, secure each stud flange with flush head screw.
- K. Fabricate corners using a minimum of three studs.
- L. Install double studs at wall openings, door and window jambs, not more than 2 inches from each side of openings.
- M. Brace stud framing system rigid.
- N. Coordinate erection of studs with requirements of door frames; install supports and attachments.
- O. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.
- P. Blocking: Use steel channels secured to studs. Provide blocking for support of plumbing fixtures, wall cabinets, toilet accessories, hardware, and opening frames.
- Q. Furring: Install at spacing and locations shown on drawings. Lap splices a minimum of 6 inches.

3.03 TOLERANCES

- A. Maximum Variation From True Position: 1/8 inch in 10 feet.
- B. Maximum Variation From Plumb: 1/8 inch in 10 feet.

END OF SECTION

SECTION 09 30 00

TILING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Tile for wall applications.
- B. Non-ceramic trim.

1.02 RELATED REQUIREMENTS

- A. Section 07 92 00 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.
- B. Section 09 21 16 - Gypsum Board Assemblies: Tile backer board.

1.03 REFERENCE STANDARDS

- A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2019.
- B. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2023.
- C. ANSI A108.1b - Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.
- D. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set, Modified Dry-Set, or Improved Modified Dry-Set Cement Mortar; 2023.
- E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesive or Water Cleanable Tile-Setting Epoxy Adhesive; 2023.
- F. ANSI A108.5 - Setting of Ceramic Tile with Dry-Set Cement Mortar, Modified Dry-Set Cement Mortar, EGP (Exterior Glue Plywood) Modified Dry-Set Cement Mortar, or Improved Modified Dry-Set Cement Mortar; 2023.
- G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grout Epoxy; 2023.
- H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2019).
- I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 2023.
- J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 2017 (Reaffirmed 2022).
- K. ANSI A108.12 - Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Modified Dry-Set Mortar; 2023.
- L. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2021).
- M. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar; 2020.
- N. ANSI A108.20 - American National Standard Specifications for Exterior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2020.
- O. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2019.
- P. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2022.

- Q. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products; 2018 (Reapproved 2023).
- R. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2024.
- S. TCNA (HB-GP) - Handbook for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs Installation; 2023.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate patterns, perimeter conditions, junctions with dissimilar materials, ceramic accessories, and setting details.
- D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches in size illustrating pattern, color variations, and grout joint size variations.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- F. Installer's Qualification Statement:
- G. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of ANSI A108/A118/A136, TCNA (HB), and TCNA (HB-GP) on-site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.
- C. Installer Qualifications:
 - 1. Company specializing in performing tile installation, with minimum of five years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.01 TILE

- A. Glazed Wall Tile, Type __: ANSI A137.1, standard grade.
 - 1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
 - 2. Size: 4_by 8 inch, nominal.
 - 3. Edges: Cushioned.
 - 4. Surface Finish: Matte glaze.
 - 5. Color(s): To be selected by Architect from manufacturer's standard range.
 - 6. Pattern: Subway - running bond.
 - 7. Trim Units: Matching bullnose and cove shapes in sizes coordinated with field tile.

2.02 TRIM AND ACCESSORIES

- A. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, set with tile mortar or adhesive.
 - 1. Applications:

- a. Open edges of wall tile.
- b. Borders and other trim as indicated on drawings.
- 2. Products:
 - a. Schluter-Systems; Schiene: www.schluter.com/#sle.
 - b. Substitutions: See Section 01 60 00 - Product Requirements.

2.03 SETTING MATERIALS

- A. Provide setting and grout materials from same manufacturer.

2.04 GROUTS

- A. Provide setting and grout materials from same manufacturer.
- B. Premixed Polymer Modified Grout: Single component, stain resistant grout.
 - 1. Applications: Where indicated.
 - 2. Color(s): As selected by Architect from manufacturer's full line.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.

3.02 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.

3.03 INSTALLATION - GENERAL

- A. Install tile and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.20, manufacturer's instructions, and TCNA (HB) or TCNA (HB-GP) recommendations, as applicable.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners neatly. Align wall joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

3.04 INSTALLATION - WALL TILE

- A. Over gypsum wallboard on wood or metal studs install in accordance with TCNA (HB) Method W243, thin-set with dry-set or latex-Portland cement bond coat, unless otherwise indicated.

3.05 CLEANING

- A. Clean tile and grout surfaces.

3.06 PROTECTION

- A. Do not permit traffic over finished floor surface for 4 days after installation.

END OF SECTION

SECTION 09 51 00
ACOUSTICAL CEILINGS - USG

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Suspended metal grid ceiling systems.
- B. Acoustical units.
- C. Wall angles and shadow moldings.
- D. Special trims and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 09 21 16 - Gypsum Board Assemblies: Gypsum board and metal framing products.

1.03 REFERENCE STANDARDS

- A. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2019.
- B. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
- C. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023d.
- E. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2023.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordination: Coordinate work of this section with installation of mechanical and electrical components and with other construction activities affected by work of this section.
 - 1. Review with affected installers those locations of facility services lines and equipment within ceiling plenum that prevent installation of hangers at spacings compliant with limitations established in referenced standards. Arrange for each affected mechanical or electrical installer to provide necessary number of additional structural support points for ceiling installer.
- B. Sequencing: Schedule work of affected trades to minimize or eliminate installation conflicts and rework.
 - 1. Ensure that acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved. Do not install acoustical units until after interior wet work is dry.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Manufacturer's qualification statement.
- D. Installer's qualification statement.

1.06 QUALITY ASSURANCE

- A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.07 FIELD CONDITIONS

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent before, during, and after acoustical unit installation.

PART 2 PRODUCTS

2.01 CEILING ASSEMBLIES

- A. Refer to Room Finish Schedule and Reflected Ceiling Plans on drawings for additional ceiling assembly information.
- B. Acoustical Ceiling Assembly Type C-1:
 - 1. Acoustical Units: Eclipse 3/4".
 - a. Panel Size: 24 inches by 24 inches (2 by 2) panel.
 - b. Panel Edge: SLT edge.
 - c. Color: Flat White.
 - 2. Suspension Grid: Donn DX 15/16-inch Suspension System.
 - a. Color: Flat white.

2.02 CEILING PERFORMANCE REQUIREMENTS

- A. Design for maximum deflection of 1/360 of span.

2.03 CEILING COMPONENT PRODUCTS

- A. Acoustical Units:
 - 1. Acoustical Units - General: ASTM E1264, Fire Class A.
 - a. Noise Reduction Coefficient (NRC) rating, Ceiling Attenuation Class (CAC) rating, and Light Reflectance Coefficient (LR) performance for each type of unit specified below, as determined in accordance with ASTM E1264.
 - b. Fire Class / Surface Burning Characteristics: Determined in accordance with test method ASTM E84.
 - 2. Acoustical Panels: Painted mineral fiber, with the following characteristics:
 - a. Classification: ASTM E1264 Type III.
 - 1) Form(s): Includes the following, as applicable to each product specified.
 - (a) Form 1 - Nodular.
 - 2) Pattern(s): Includes the following, as applicable to each product specified.
 - (a) E - Lightly textured.
 - (b) I - Embossed.
 - b. Products:
 - 1) USG Corporation; Eclipse Panels: www.usg.com/ceilings/#sle.
- B. Suspension Systems:
 - 1. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with wall angles and moldings and splices as required.
 - 2. Exposed Acoustical Suspension System: Hot-dipped galvanized steel grid and cap.
 - a. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
 - b. Profile: Tee; 15/16 inch face width.
 - c. Finish: Baked enamel.
 - d. Color: Flat White 050.
 - e. Products:
 - 1) USG Corporation; DX 15/16 Inch Suspension System: www.usg.com/ceilings/#sle.
- C. Moldings and Trim:
 - 1. Edge Molding and Splices - General: Same material, thickness, and finish as metal pan panels, unless otherwise indicated.
 - 2. Perimeter Wall Moldings: Same metal and finish as grid.
 - a. Size: As required for installation conditions.
 - 3. Trim Accessories: Manufacturer's standard clips, cleats splice plates, extension plates, closure plates, corner pieces, and similar accessories required for a complete installation.

2.04 ACCESSORIES

- A. Support Channels, Carriers, and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
- B. Suspension Wire: Size and type as required for application, seismic requirements, and ceiling system flatness requirement specified.
 - 1. Concealed Suspension:
 - a. Suspension Wire: Steel, annealed, galvanized finish, 12 gauge, 0.0808 diameter, complying with ASTM A641/A641M.
- C. Touch-Up Paint for Exposed Surfaces: Type and color to match acoustical units and suspension system grid and trim elements.
- D. Touch-Up Paint For Concealed Items: Zinc rich type, as recommended by ceiling system manufacturer.

2.05 FABRICATION

- A. Shop fabricate ceiling components to the greatest extent possible.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.
- C. Verify that field measurements are as indicated on shop drawings.
- D. Start of installation constitutes acceptance of project conditions.

3.02 PREPARATION

- A. Coordinate the location of hangers with other work.
- B. Install ceiling system after major above-ceiling work is complete.

3.03 INSTALLATION - SUSPENSION SYSTEM

- A. Install suspension system in accordance with ASTM C636/C636M and manufacturer's instructions and as supplemented in this section.
- B. Install hangers and inserts coordinated with overhead work. Provide additional hangers and supports as required.
- C. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- D. Suspension System, Nonseismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- E. Where ducts, facility services, or equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- H. Do not eccentrically load system or induce rotation of runners.
- I. Edge Moldings: Install at intersection of ceiling and vertical surfaces and penetrations, using components of maximum length; set level. Provide edge moldings at junction with other ceiling finishes. Miter corners. Provide preformed edge closures to match bullnosed cornered partitions.
 - 1. Use longest practical lengths.

3.04 INSTALLATION - ACOUSTICAL UNITS

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Lay directional patterned units with pattern parallel to longest room axis.
- D. Fit edge trim neatly against abutting surfaces.
- E. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- F. Cutting Acoustical Units:
 - 1. Cut to fit irregular grid and perimeter edge trim.
 - 2. Make field cut edges of same profile as factory edges.
- G. Where round obstructions occur, provide preformed closures to match perimeter molding.

3.05 TOLERANCES

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: Two degrees.

3.06 CLEANING

- A. Clean and touch up minor finish damage. Remove and replace components that cannot be successfully cleaned and repaired.

END OF SECTION

**SECTION 09 65 00
RESILIENT FLOORING**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Resilient tile flooring.
- B. Resilient base.
- C. Installation accessories.

1.02 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Shop Drawings: Indicate seaming plans and floor patterns.
- D. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- E. Manufacturer's Qualification Statement.
- F. Installer's Qualification Statement.
- G. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.03 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

1.05 FIELD CONDITIONS

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 TILE FLOORING

- A. Resilient Tile with Rigid Polymeric Core: Printed film type, with transparent or translucent wear layer; polymeric rigid core with or without backing.
 - 1. Minimum Requirements: Comply with ASTM F3261, Class I; Type A - Smooth; Grade 1 - Commercial.
 - 2. Backing Class: Class A - No backing.
 - 3. Plank Tile Size: 6 by 36 inches.
 - 4. Wear Layer Thickness: 0.020 inch.
 - 5. Total Thickness: 0.26 inch.
 - 6. Tile Edge: Interlocking shape.
 - 7. Color: As indicated on drawings.

2.02 RESILIENT BASE

- A. Resilient Base: ASTM F1861, Type TS, rubber, vulcanized thermoset; style as scheduled.
 - 1. Height: 6 inches.
 - 2. Thickness: 0.125 inch.
 - 3. Finish: Satin.
 - 4. Length: Roll.
 - 5. Color: Dark Grey to match existing.

2.03 ACCESSORIES

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Transition and Edge Strips: vinyl.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

- A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.
- B. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- C. Prohibit traffic until filler is fully cured.
- D. Clean substrate.
- E. Apply primer as required to prevent "bleed-through" or interference with adhesion by substances that cannot be removed.

3.03 INSTALLATION - GENERAL

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive-Applied Installation:
 - 1. Spread only enough adhesive to permit installation of materials before initial set.
 - 2. Fit joints and butt seams tightly.
 - 3. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
 - 1. Resilient Strips: Attach to substrate using adhesive.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - TILE FLOORING

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Lay flooring with joints and seams parallel to building lines to produce symmetrical pattern.

- C. Install plank tile with a random offset of at least 6 inches from adjacent rows.

3.05 INSTALLATION - RESILIENT BASE

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Install base on solid backing. Bond tightly to wall and floor surfaces.
- C. Scribe and fit to door frames and other interruptions.

3.06 CLEANING

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

3.07 PROTECTION

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

END OF SECTION

SECTION 09 91 23
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Floors, unless specifically indicated.
 - 6. Glass.
 - 7. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

- A. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual; Current Edition.
- B. SSPC-SP 1 - Solvent Cleaning; 2015, with Editorial Revision (2016).
- C. SSPC-SP 6/NACE No.3 - Commercial Blast Cleaning; 2006.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g., "alkyd enamel").
 - 2. MPI product number (e.g., MPI #47).
 - 3. Cross-reference to specified paint system products to be used in project; include description of each system.
 - 4. Manufacturer's installation instructions.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 5 years experience and approved by manufacturer.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: 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. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.06 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply materials when relative humidity exceeds 85 percent, at temperatures less than 5 degrees F above the dew point, or to damp or wet surfaces.
- D. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- E. Provide lighting level of 80 fc measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Base Manufacturer: Owners standard - see finish schedule.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready-mixed, unless intended to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Flammability: Comply with applicable code for surface burning characteristics.
- C. Colors: As indicated in Color Schedule.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete masonry units, and shop primed steel.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): Interior Latex.
 - 3. Top Coat Sheen:
 - a. Eggshell: MPI gloss level 3; use this sheen at all walls.
- B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
 - 1. Medium duty applications include door frames.
 - 2. Two top coats and one coat primer.
 - 3. Top Coat Sheen:
 - a. Semi-Gloss: MPI gloss level 5; use this sheen at all locations.
 - 4. Primer: As recommended by top coat manufacturer for specific substrate.

2.04 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
 - 1. Alkali Resistant Water Based Primer.
 - 2. Interior Drywall Primer Sealer.

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces is below the following maximums:
 - 1. Gypsum Wallboard: 12 percent.
 - 2. Masonry, Concrete, and Concrete Masonry Units: 12 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or repair existing paints or finishes that exhibit surface defects.
- D. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Masonry:
 - 1. Prepare surface as recommended by top coat manufacturer.
- G. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.
- H. Ferrous Metal:
 - 1. Solvent clean according to SSPC-SP 1.
 - 2. Shop-Primed Surfaces: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.
 - 3. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning in accordance with SSPC-SP 6/NACE No.3. Protect from corrosion until coated.
- I. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- F. Sand wood and metal surfaces lightly between coats to achieve required finish.
- G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

- H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

- A. See Section 01 40 00 - Quality Requirements, for general requirements for field inspection.
- B. Owner will provide field inspection.

3.05 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 10 28 00
TOILET, BATH, AND LAUNDRY ACCESSORIES - ASI

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Grab bars.
- B. Mirrors.
- C. Paper towel dispensers. (Owner supplied - contractor installed)
- D. Soap and hand sanitizer dispensers. (Owner supplied - contractor installed)
- E. Toilet tissue dispensers. (Owner supplied - contractor installed)

1.02 RELATED REQUIREMENTS

- A. Section 09 21 16 - Gypsum Board Assemblies: Placement of wood blocking in stud wall construction for attachment of accessories.

1.03 REFERENCE STANDARDS

- A. ADA Standards - 2010 ADA Standards for Accessible Design; 2010.
- B. ASTM C1036 - Standard Specification for Flat Glass; 2021.
- C. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror; 2024.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate work with the placement of internal wall reinforcement to receive anchor attachments.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design Manufacturer: American Specialties, Inc: www.americanspecialties.com/#sle.

2.02 GRAB BARS

- A. Grab Bars: Type 304 stainless steel.
 - 1. Standard Duty Grab Bars:
 - a. Push/Pull Point Load: 250 lbf, minimum.
 - b. Clearance: 1-1/2 inch clearance between wall and inside of grab bar.
 - c. Length and Configuration: As indicated on drawings.

2.03 MIRRORS

- A. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass, ASTM C1036.
 - 1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
 - 2. Size: 18 inches wide by 36 high..
 - 3. Channel Frame: One piece roll formed 20 gauge, 0.0375 inch, 1/2 inch by 1/2 inch Type 304 stainless steel channel that encases mirror and backing with tight mitered corners, and tamperproof hanging system; satin finish.
 - 4. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
 - 5. Fixed Tilt Mirrors: Minimum 3 inches tilt from top to bottom.
 - 6. Products:
 - a. Model 0535 Series - Fixed Tilt Mirror.

2.04 PAPER TOWEL DISPENSERS

- A. Owner to supply, contractor to install

2.05 SOAP AND HAND SANITIZER DISPENSERS

- A. Owner to supply, Contractor to install.

2.06 TOILET TISSUE DISPENSERS

- A. Owner to supply, contractor to install.

2.07 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
 - 1. Grind welded joints smooth.
 - 2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.
- B. Keys: Provide _____ keys for each accessory to Owner; master key lockable accessories.
- C. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.
- D. Fasteners, Screws, and Bolts: Hot dip galvanized; tamperproof; security type.

2.08 FABRICATION

2.09 FINISHES

- A. Stainless Steel: Satin finish, unless otherwise noted.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. Verify that field measurements are as indicated on drawings.

3.02 PREPARATION

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

3.03 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
 - 1. Grab Bars: As indicated on drawings.

3.04 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

SECTION 12 21 13
WINDOW BLINDS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Horizontal cellular Shades.
- B. Operating hardware.

1.02 REFERENCE STANDARDS

- A. WCMA A100.1 - Standard for Safety of Window Covering Products; 2022.

1.03 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating physical and dimensional characteristics.
- C. Shop Drawings: Indicate opening sizes, tolerances required, method of attachment, clearances, and operation.
- D. Manufacturer's Installation Instructions: Indicate special procedures.

1.04 QUALITY ASSURANCE

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

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Horizontal Louver Blinds:
 - 1. justblinds.com; inside mount, 24"x70" Cellular Shade, 3/4" single cell. light filtering with gray sheen, SCLF 021 color with standard right-side cord..
- B. Source Limitations: Furnish blinds produced by a single manufacturer and obtained from a single supplier.

2.02 BLINDS WITHOUT SIDE GUIDES

- A. Description: Horizontal cellular shades
- B. Manual Operation: Control of raising and lowering by cord with full range locking; blade angle adjustable by _____.
- C. Slat Support: Woven polypropylene cord, ladder configuration.
- D. Lift Cord: Braided nylon, continuous loop with restraining device; comply with WCMA A100.1.
- E. Headrail Attachment: Wall brackets.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that openings are ready to receive the work.

3.02 INSTALLATION

- A. Install blinds in accordance with manufacturer's instructions.
- B. Secure in place with concealed fasteners.

3.03 TOLERANCES

- A. Maximum Variation of Gap at Window Opening Perimeter: 1/4 inch.
- B. Maximum Offset From Level: 1/8 inch.

3.04 ADJUSTING

- A. Adjust blinds for smooth operation.

3.05 CLEANING

- A. Clean blind surfaces just prior to occupancy.

END OF SECTION

SECTION 12 32 00
MANUFACTURED WOOD CASEWORK

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Manufactured standard and custom casework, with cabinet hardware.
- B. Countertops.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Blocking and nailers for anchoring casework.
- B. Section 07 92 00 - Joint Sealants: Sealing joints between casework and countertops and adjacent walls, floors, and ceilings.
- C. Section 09 22 16 - Non-Structural Metal Framing: Reinforcements in metal-framed partitions for anchoring casework.
- D. Section 09 65 00 - Resilient Flooring: Resilient wall base.

1.03 DEFINITIONS

- A. Exposed: Portions of casework visible when drawers and cabinet doors are closed, including end panels, bottoms of cases more than 42 inches above finished floor, tops of cases less than 72 inches above finished floor and all members visible in open cases or behind glass doors.
- B. Semi-Exposed: Portions of casework and surfaces behind solid doors, tops of cases more than 72 inches above finished floor and bottoms of cabinets more than 30 inches but less than 42 inches above finished floor.
- C. Concealed: Sleepers, web frames, dust panels and other surfaces not generally visible after installation and cabinets less than 30 inches above finished floor.

1.04 REFERENCE STANDARDS

- A. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition; 2014, with Errata (2016).
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards; 2021, with Errata.
- C. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; 2020.
- D. ISFA 2-01 - Classification and Standards for Solid Surfacing Material; 2013.
- E. NEMA LD 3 - High-Pressure Decorative Laminates; 2005.

1.05 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements for submittal procedures.
- B. Product Data: Component dimensions, configurations, construction details, joint details, attachments.
- C. Shop Drawings: Indicate casework types, sizes, and locations, using large scale plans, elevations, and cross sections. Include rough-in and anchors and reinforcements, placement dimensions and tolerances, clearances required, and keying information.
- D. Manufacturer's Installation Instructions.
- E. Manufacturer's Qualification Statement.
- F. Maintenance Data: Manufacturer's recommendations for care and cleaning.
- G. Finish touch-up kit for each type and color of materials provided.

1.06 QUALITY ASSURANCE

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

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

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Protect items provided by this section, including finished surfaces and hardware items during handling and installation. For metal surfaces, use polyethylene film or other protective material standard with the manufacturer.
- B. Acceptance at Site:
 - 1. Do not deliver or install casework until the conditions specified under Part 3, Examination Article of this section have been met. Products delivered to sites that are not enclosed and/or improperly conditioned will not be accepted if warping or damage due to unsatisfactory conditions occurs.
- C. Storage:
 - 1. Store casework in the area of installation. If necessary, prior to installation, temporarily store in another area, meeting the environmental requirements specified under Part 3, "Site Verification of Conditions" Article of this section.

1.08 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion, at no additional cost to Owner. Defects include, but are not limited to:
 - 1. Ruptured, cracked, or stained finish coating.
 - 2. Discoloration or lack of finish integrity.
 - 3. Cracking or peeling of finish.
 - 4. Delamination of components.
 - 5. Failure of adhesives.
 - 6. Failure of hardware.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Obtain casework from single source and manufacturer, unless otherwise indicated.

2.02 CASEWORK, GENERAL

- A. Quality Standard: AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Plastic Laminate Faced Cabinets: Custom Grade.

2.03 FABRICATION

- A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.
- B. Construction: As required for selected grade.
- C. Structural Performance: Safely support the following minimum loads:
 - 1. Base Units: 500 pounds per linear foot across the cabinet ends.
 - 2. Suspended Units: 300 pounds static load.
 - 3. Drawers: 125 pounds, minimum.
 - 4. Hanging Wall Cases: 300 pounds.
 - 5. Shelves: 100 pounds, minimum.
- D. Fittings and Fixture Locations: Cut and drill components for fittings and fixtures.
- E. Hardware Application: Factory-machine casework members for hardware that is not surface applied.
- F. Access Panels: Where indicated, for maintenance of utility service and mechanical and electrical components.
- G. Fixed panels at backs of open spaces between base cabinets.

1. Provide cutouts for power receptacles where indicated on drawings.
- H. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- I. Scribes and Fillers: Panels of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.

2.04 PLASTIC-LAMINATE-CLAD CASEWORK

- A. Plastic-Laminate-Clad Casework: Solid wood and wood panel construction; each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable levelers for base cabinets.
 1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.
 2. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with following front-to-back dimensions:
 - a. Base Cabinets: 22 inches.
 - b. Tall Cabinets: 22 inches.
 - c. Wall Cabinets: 13 inches.
 3. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
 - a. Finish: Matte or suede, gloss rating of 5 to 20.
 - b. Surface Color and Pattern: As selected by Architect from manufacturer's full line.
 - c. Exposed Interior Surfaces: Thermally fused laminate.
 - 1) Color: White.
 - d. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
 - e. Cap exposed plastic laminate finish edges with plastic trim.

2.05 COUNTERTOPS

- A. Types: More than one type is required. See drawings for location of each type of countertop.
- B. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Custom Grade, unless otherwise noted.
- C. Plastic Laminate Countertops: High pressure decorative laminate sheet bonded to substrate.
 1. Manufacturer's standard configuration for exposed edges, back and end splashes.
- D. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
 1. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
 2. Manufacturer's standard configuration for exposed edges, back and end splashes.
 3. Fabricate in accordance with manufacturer's standard requirements.

2.06 CABINET HARDWARE

- A. Shelves in Cabinets:
 1. Shelf Standards and Rests: Vertical standards with rubber button fitted rests, satin chromium plated over nickel on base material.
- B. Swinging Doors: Hinges, pulls, and catches.
 1. Hinges: Concealed, number as required by referenced standards for width, height, and weight of door.
 - a. Concealed Hinges: Installed in cabinet edge, and on door back, bright chromium plated over nickel on base material.
 - 1) European-Style Hinges for Overlay Doors: 110 degree opening angle.
 2. Pulls: Chrome wire pulls, 4 inches wide.
 3. Catches: Magnetic.
- C. Drawers: Pulls and slides.

1. Pulls: Chrome wire pulls, 4 inches wide.
2. Slides: Steel, full extension arms, ball bearings; self-closing; capacity as recommended by manufacturer for drawer height and width.

2.07 MATERIALS

- A. Wood-Based Materials:
 1. Solid Wood: Air-dried to 4.5 percent moisture content, then tempered to 6 percent moisture content before use.
- B. Semi-Exposed Solid Wood: Dry, sound, plain sawn, no appearance defects, any species similar in color and grain to exposed portions.
- C. Hardwood Plywood: Veneer core; HPVA HP-1 Grade as indicated; same species as exposed solid wood, clear, compatible grain and color, no defects. Band exposed edges with solid wood of same species as veneer.
- D. Concealed Solid Wood or Plywood: Any species and without defects affecting strength or utility.
- E. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications. complying with Grade requirements, and standard with the manufacturer.
- F. Thermally Fused Laminate (TFL): Melamine resin, NEMA LD 3, Type VGL laminate panels.

2.08 ACCESSORIES

- A. Plastic Edge Banding: Extruded PVC, convex shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
 1. Color: As selected by Architect from manufacturer's standard range.
- B. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.
- C. Concealed Joint Fasteners: Corrosion-resistant, standard with manufacturer.
- D. Sealant for Use in Casework Installation:
 1. Manufacturer's recommended type.

PART 3 EXECUTION

3.01 PREPARATION

- A. Large Components: Ensure that large components can be moved into final position without damage to other construction.

3.02 EXAMINATION

- A. Site Verification of Environmental Conditions:
 1. Do not deliver casework until the following conditions have been met:
 - a. Building has been enclosed (windows and doors sealed and weather-tight).
 - b. An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
 - c. Ceiling, overhead ductwork, piping, and lighting have been installed.
 - d. Installation areas do not require further wet work construction.
- B. For Base Cabinets Installation: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions required more than 1/2 inch leveling adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point.
- C. For Wall Cabinets Installation: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:
 1. Maximum variation from plane of masonry wall exceeds 1/4 inch in 10 ft and 1/2 inch in 20 ft or more, and/or maximum variation from plumb exceeds 1/4 inch per story.
 2. Maximum Variation of finished gypsum board surface from true flatness: 1/8 inch in 10 feet in any direction.
- D. Verify adequacy of support framing and anchors.

- E. Verify that service connections are correctly located and of proper characteristics.

3.03 INSTALLATION

- A. Perform installation in accordance with manufacturer's instructions.
- B. Use anchoring devices to suit conditions and substrate materials encountered. Use concealed fasteners to the greatest degree possible. Use exposed fasteners only where allowed by approved shop drawings, or where concealed fasteners are impracticable.
- C. Set casework items plumb and square, securely anchored to building structure.
- D. Align cabinets to adjoining components, install filler and/or scribe panels where necessary to close gaps.
- E. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
 - 1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
 - 2. Variation of Bottoms of Wall Cabinets from Level: 1/8 inch in 10 feet.
 - 3. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
 - 4. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
 - 5. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.
- F. Secure wall and floor cabinets to concealed reinforcement and blocking at gypsum board assemblies.
- G. Base Cabinets: Fasten cabinets to service space framing and/or wall substrates, with fasteners spaced not more than 16 inches on center. Bolt adjacent cabinets together with joints flush, tight, and uniform.
- H. Wall Cabinets: Fasten to hanging strips, and/or wall substrates. Fasten each cabinet through back, near top, at not less than 16 inches on center.
- I. Install hardware uniformly and precisely.
- J. Countertops: Install countertops intended and furnished for field installation in one true plane, with ends abutting at hairline joints, and no raised edges.
- K. Replace units that are damaged, including those that have damaged finishes.

3.04 ADJUSTING

- A. Adjust operating parts, including doors, drawers, hardware, and fixtures to function smoothly.

3.05 CLEANING

- A. Clean casework and other installed surfaces thoroughly.

3.06 PROTECTION

- A. Do not permit finished casework to be exposed to continued construction activity.
- B. Protect casework and countertops from ongoing construction activities. Prevent workmen from standing on, or storing tools and materials on casework or countertops.
- C. Repair damage, including to finishes, that occurs prior to Date of Substantial Completion, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

END OF SECTION