

BID FORM/SPECIFICATIONS FOR:

# **MONROE FIRE PROTECTION DISTRICT STATION #26**

FIRE STATION WITH FIRE EQUIPMENT BAY AND LIVING  
SPACE

478 East Chambers Pike

Bloomington, Indiana 47401

Date: July 24<sup>TH</sup>, 2024

**ARCHITECT:**

Tabor/Bruce Architecture & Design, Inc.  
1101 S Walnut Street  
Bloomington, Indiana 47401 (812) 332-6258  
[www.taborbruce.com](http://www.taborbruce.com)

**Pre-Bid Meeting -Date: Wednesday August, 21<sup>st</sup>, 2024, 1:00 pm**

**Nat U Hill Room -Monroe County Courthouse**

**Bid Opening Date: Wednesday, September 4th, 2024 at 1:00 pm at Nat U Hill Room - Monroe County Courthouse**

**Bid Award Date: Wednesday, September 11th, 2024 at the regularly scheduled board meeting at Station 21 located at 9094 S Strain Ridge Rd.**

**SECTION 000101  
PROJECT TITLE PAGE**

**PROJECT MANUAL**

**FOR**

**WASHINGTON TOWNSHIP FIRE STATION**

**OWNER'S PROJECT NUMBER:2921**

**WASHINGTON TOWNSHIP BOARD**

**478 EAST CHAMBERS PIKE**

**BLOOMINGTON , INDIANA 47408**

**DATE: NOVEMBER 15TH, 2021**

**PREPARED BY:**

**TABOR/BRUCE ARCHITECTURE & DESIGN INC.**

**END OF SECTION**

**SECTION 000102  
PROJECT INFORMATION**

**PART 1 GENERAL**

**1.01 PROJECT IDENTIFICATION**

- A. Project Name: Washington Township Fire Station, located at:
- B. Owner's Project Number: 23344.  
478 East Chambers Pike.  
Bloomington, Indiana 47404
- C. The Owner, hereinafter referred to as Washington Township Board
  - 1. Sales Tax Exemption Number: [ ]
- D. Owner's Project Manager: ~~XXXXXXXXXX~~ DUSTIN DILLARD 812-331-1906

**1.02 NOTICE TO PROSPECTIVE BIDDERS**

- A. These documents constitute an Invitation to Bid to General Contractors for the construction of the project described below.

**1.03 PROJECT DESCRIPTION**

- A. Summary Project Description: Construct a new pole framed fire station with living quarters and a fire bay..
- B. Contract Scope: Construction.
- C. Contract Terms: Lump sum (fixed price, stipulated sum).

**1.04 PROJECT CONSULTANTS**

- A. The Architect, hereinafter referred to as Architect: Tabor/Bruce Architecture & Design, Inc..
  - 1. Address: 1101 S Walnut St.
  - 2. City, State, Zip: Bloomington IN 47401.
  - 3. Phone/Fax: 812-332-6258.
  - 4. E-mail: dbruce@taborbruce.com.

**1.05 PROCUREMENT TIMETABLE**

- A. Pre-Bid Site Tour: Monday, November 1, 2022, 10:00 AM to 12:00 PM, local time.
- B. Last Request for Substitution Due: 3 days prior to due date of bids.
- C. Last Request for Information Due: 3 days prior to due date of bids.
- D. Bid Due Date: Monday, December 12, 2022, 12:00 PM, local time.
- E. Bid Opening: Same day, 8:00 AM, local time. Opening will take place at Simpson Shop, 100 West Simpson Shop, Bloomington, IN 47404.
- F. Notice to Proceed: Within 30 days after interview date.
- G. Bids May Not Be Withdrawn Until: 30 days after due date.
- H. Desired Final Completion Date: ~~XXXXXXXXXX~~ August 1st, 2023.
- I. Completion date is critical due to requirements of Owner's operations.
- J. The Owner reserves the right to change the schedule or terminate the entire procurement process at any time.

**1.06 PROCUREMENT DOCUMENTS**

- A. Availability of Documents: Complete sets of procurement documents may be obtained:
  - 1. From the Architect at the address listed above.
  - 2. For the deposit sum of \$50, which will be refunded upon return of documents in accordance with the requirements of the Instructions to Bidders.
- B. Documents may be viewed at The offices of the Architect..
- C. Documents are on display at the offices of the following construction plan rooms:

**1.07 BID SECURITY**

- A. Bids shall be accompanied by a security deposit as follows:

~~XXXXXXXXXX~~ [HTTPS://WWW.MONROEFD.ORG/BID-REQUEST.HTML](https://www.monroefd.org/bid-request.html)  
OR PURCHASED AT MR. COPY.

1. Bid Bond of a sum no less than 5 percent of the Bid Amount on AIA A310 Bid Bond Form.

**1.08 SIGNATURE**

A. For: [\_\_\_\_\_]

B. By: [\_\_\_\_\_]

1. Signed: \_\_\_\_\_
2. (Authorized signing officer)

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**

SECTION 001113  
ADVERTISEMENT FOR BIDS

FROM:

1.01 THE OWNER (HEREINAFTER REFERRED TO AS OWNER):

- A. ~~Washington Township Board~~ MONROE FIRE PROTECTION DISTRICT  
B. Address: ~~1974 N FOX HOLLOW RD~~ 3953 S. KENNEDY DR  
~~Bloomington, IN 47408~~ Bloomington IN 47401

1.02 AND THE ARCHITECT (HEREINAFTER REFERRED TO AS ARCHITECT):

- A. Tabor Bruce Architecture & Design, Inc.  
B. Address:  
1101 S Walnut Street  
[ ]  
Bloomington, IN 47408

1.03 DATE: ~~NOVEMBER 15TH 2021~~

1.04 TO: POTENTIAL BIDDERS

- A. Your firm is invited to submit an offer under seal to Owner for construction of a facility located at:  
478 East Chambers Pike  
Bloomington, Indiana, 47404  
~~Bids are to be opened at standard time on the 13th day of December, 2021, 10:~~
- B. Project: Washington Township Fire Station
- C. Owner's Project Number: 23344
- D. Bid Documents for a Stipulated Sum contract may be obtained from the office of the Design Professional upon receipt of a refundable deposit, by cash, in the amount of \$50 for one set.
- E. Bidders will be required to provide Bid security in the form of a Bid Bond of a sum no less than 5 percent of the Bid Amount.
- F. Refer to other bidding requirements described in Document 002113 - Instructions to Bidders and Document 003100 - Available Project Information.
- G. Submit your offer on the Bid Form provided. Bidders may supplement this form as appropriate.
- H. Your offer will be required to be submitted under a condition of irrevocability for a period of 30 days after submission.
- I. The Owner reserves the right to accept or reject any or all offers.

1.05 SIGNATURE

- A. For:
- B. By: \_\_\_\_\_  
1. Signed: \_\_\_\_\_  
2. (Authorized signing officer)

ENCL.

END OF SECTION

**SECTION 002113  
INSTRUCTIONS TO BIDDERS**

**SUMMARY**

**1.01 SEE AIA A701, INSTRUCTIONS TO BIDDERS [\_\_\_\_\_].**

**1.02 DOCUMENT INCLUDES**

- A. Invitation
  - 1. Bid Submission
  - 2. Intent
  - 3. Work Identified in Contract Documents
  - 4. Contract Time
- B. Bid Documents and Contract Documents
  - 1. Definitions
  - 2. Contract Documents Identification
  - 3. Availability
  - 4. Examination
  - 5. Inquiries/Addenda
  - 6. Product/Assembly/System Substitutions
- C. Site Assessment
  - 1. Prebid Conference
- D. Bid Submission
  - 1. Bid Depository
  - 2. Submission Procedure
  - 3. Bid Ineligibility
- E. Bid Enclosures/Requirements
  - 1. Security Deposit
  - 2. Performance Assurance
  - 3. Insurance
  - 4. Bid Form Requirements
  - 5. Fees for Changes in the Work
  - 6. Bid Form Signature
  - 7. Additional Bid Information
  - 8. Selection and Award of Alternates
- F. Offer Acceptance/Rejection
  - 1. Duration of Offer
  - 2. Acceptance of Offer

**1.03 RELATED DOCUMENTS**

- A. Document 011000 - Summary.
- B. Document 001113 - Advertisement for Bids.
- C. Document 004336 - Proposed Subcontractors Form.
- D. Document 004322 - Unit Prices Form.
- E. Document 004323 - Alternates Form.
- F. Document 004325 - Substitution Request Form - During Procurement
- G. Document 004327 - Separate Prices Break-Out Form.
- H. Document 004373 - Proposed Schedule of Values Form.
- I. Document 007300 - Supplementary Conditions:
  - 1. Tax exempt procedures.
  - 2. Bond types and values.

**INVITATION**

**2.01 BID SUBMISSION**

- A. Bids signed and under seal, executed, and dated will be received ~~at the office of the Architect before 4 p.m. local standard time on the 18th day of December, 2024~~

AS NOTED ON  
PAGE TWO.

- B. Offers submitted after the above time shall be returned to the bidder unopened.
- C. Offers will be opened ~~at 1:00 pm on the 15th day of December, at the office of The Trustees at Simpson Chapel, located at 550 W Simpson Chapel Rd, Bloomington IN 47404.~~ **AS NOTED PAGE TWO.**

## 2.02 INTENT

- A. The intent of this Bid request is to obtain an offer to perform work to complete a ~~6,800~~ ~~square foot~~ pole framed fire station, located at 478 East Chambers Pike, Bloomington IN 47404 for a Stipulated Sum contract, in accordance with Contract Documents.

## 2.03 WORK IDENTIFIED IN THE CONTRACT DOCUMENTS

- A. Work of this proposed Contract comprises building construction, including general construction Work.

## 2.04 CONTRACT TIME

- A. Identify Contract Time in the Bid Form. The completion date in the Agreement shall be the Contract Time added to the commencement date.

## BID DOCUMENTS AND CONTRACT DOCUMENTS

### 3.01 DEFINITIONS

- A. Bid Documents: Contract Documents supplemented with Invitation To Bid, Instructions to Bidders, Information Available to Bidders, Bid Form Supplements To Bid Forms and Appendices identified.

### 3.02 CONTRACT DOCUMENTS IDENTIFICATION **MONROE FIRE PROTECTION DISTRICT - STATION #26**

- A. Contract Documents are identified as ~~Working Drawings, Fire Station Number [redacted]~~, as prepared by Architect who is located at 1101 S Walnut Street, Bloomington IN 47401, and with contents as identified in the Table of Contents.

### 3.03 AVAILABILITY

- A. Bid Documents may be obtained ~~at the office of Architect who is located at 1101 S Walnut Street, Bloomington IN 47401.~~ **AS NOTED ON PAGE 4 1.06**
- B. ~~One set of Bid Documents can be obtained by bidder free of charge upon receipt of a refundable deposit by each of the amount of \$60.00 for one set.~~
- C. ~~Deposit will be refunded if Bid Documents are returned complete, undamaged, unmarked and received within 7 days of bid submission. Failure to comply will result in forfeiture of deposit.~~
- D. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

### 3.04 EXAMINATION

- A. Bid Documents may be viewed at the office of Architect which is located at 1101 S Walnut Street, Bloomington IN 47401.
- B. Bid Documents are on display at the offices of the following construction plan rooms:
  1. ~~RapidPlanks~~ **SEE PAGE 4, 1.06**
- C. Upon receipt of Bid Documents verify that documents are complete. Notify Architect should the documents be incomplete.
- D. Immediately notify Architect upon finding discrepancies or omissions in the Bid Documents.

### 3.05 INQUIRIES/ADDENDA

- A. Addenda may be issued during the bidding period. All Addenda become part of Contract Documents. Include resultant costs in the Bid Amount.
- B. Verbal answers are not binding on any party.
- C. Clarifications requested by bidders must be in writing not less than 3 days before date set for receipt of bids. The reply will be in the form of an Addendum, a copy of which will be forwarded to known recipients.

### 3.06 PRODUCT/ASSEMBLY/SYSTEM SUBSTITUTIONS

- A. General Requirements for Substitution Requests:
  1. Project Manual establishes standards for products, assemblies, and systems.



2. Submit requests only for elements for which substitution is specifically allowed in the Project Manual.
  3. Provide sufficient information to determine acceptability of proposed substitutions.
  4. Provide complete information on required revisions to other work to accommodate each proposed substitution.
- B. Substitution Request Time Restrictions:
1. Where the Bid Documents stipulate a particular product, substitutions will be considered up to 3 days before receipt of bids.
- C. Substitution Request Form:
1. Submit substitution requests by completing the form in Section 004325; see this section for additional information and instructions. Use only this form; other forms of submission are unacceptable.
- D. Review and Acceptance of Request:
1. Architect may approve the proposed substitution and will issue an Addendum to known bidders.
  2. For approved substitutions, include representation of changes in the bid, if any, required in the work and changes to Contract Time and Contract Sum to accommodate such substitutions. A later claim by the bidder for an addition to the Contract Time or Contract Sum because of changes in work necessitated by use of substitutions will not be considered.

## **SITE ASSESSMENT**

### **4.01 SITE EXAMINATION**

- A. Examine the project site before submitting a bid.
- B. A visit to the project site has been arranged for bidders as follows: 1pm November 22nd

### **4.02 PREBID CONFERENCE**

- AS NOTED PAGE TWO.*
- A. A bidders conference has been scheduled for 1pm on the 22nd day of November at the location of the site, 170 East Chambers. ~~Site~~
  - B. All general contract bidders and suppliers are invited.
  - C. Summarized minutes of this meeting will be circulated to attendees. These minutes will not form part of Contract Documents.
  - D. Information relevant to the Bid Documents will be recorded in an Addendum, issued to Bid Document recipients.

## **QUALIFICATIONS**

### **5.01 SUBCONTRACTORS/SUPPLIERS/OTHERS**

- A. Owner reserves the right to reject a proposed subcontractor for reasonable cause.
- B. Refer to General Conditions.

## **BID SUBMISSION**

### **6.01 BID DEPOSITORY**

- A. The rules and regulations of this bid deposit system, in force on the day of bid submission shall apply.

### **6.02 SUBMISSION PROCEDURE**

- A. Bidders shall be solely responsible for the delivery of their bids in the manner and time prescribed.
- B. Submit one copy of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with bidder's name, project name and Owner's name on the outside.
- C. An abstract summary of submitted bids will be made available to all bidders following bid opening.

### **6.03 BID INELIGIBILITY**

- A. Bids that are unsigned, improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may at the discretion of the Owner, be declared unacceptable.

- B. Bid Forms, Appendices, and enclosures that are improperly prepared may, at the discretion of Owner, be declared unacceptable.
- C. Failure to provide security deposit, bonding or insurance requirements may, at the discretion of Owner, be waived.

## **BID ENCLOSURES/REQUIREMENTS**

### **7.01 SECURITY DEPOSIT**

- A. Bids shall be accompanied by a security deposit as follows:
  - 1. Bid Bond of a sum no less than 5 percent of the Bid Amount on AIA A310 Bid Bond Form.
- B. Endorse the Bid Bond in the name of the Owner as obligee, signed and sealed by the principal (Contractor) and surety.
- C. The security deposit will be returned after delivery to the Owner of the required Performance and Payment Bond(s) by the accepted bidder.
- D. Include the cost of bid security in the Bid Amount.
- E. If no contract is awarded, all security deposits will be returned.

### **7.02 PERFORMANCE ASSURANCE**

- A. Accepted Bidder: Provide a Performance bond as described in 007300 - Supplementary Conditions.
- B. Include the cost of performance assurance bonds in the Bid Amount.

### **7.03 INSURANCE**

- A. Provide an executed "Undertaking of Insurance" on a standard form provided by the insurance company stating their intention to provide insurance to the bidder in accordance with the insurance requirements of Contract Documents.

### **7.04 BID FORM REQUIREMENTS**

- A. Complete all requested information in the Bid Form and Appendices.
- B. Taxes: Refer to Document 007300 - Supplementary Conditions for products that are tax exempt.

### **7.05 FEES FOR CHANGES IN THE WORK**

- A. Include the fees for overhead and profit on own Work and Work by subcontractors, identified in Document 007300 - Supplementary Conditions .
- B. Include in the Bid Form, the overhead and profit fees on own Work and Work by subcontractors, applicable for Changes in the Work, whether additions to or deductions from the Work on which the Bid Amount is based.

### **7.06 BID FORM SIGNATURE**

- A. The Bid Form shall be signed by the bidder, as follows:
  - 1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature. Affix seal.
  - 2. Partnership: Signature of all partners in the presence of a witness who will also sign. Insert the word "Partner" under each signature. Affix seal to each signature.
  - 3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix the corporate seal. If the bid is signed by officials other than the president and secretary of the company, or the president/secretary/treasurer of the company, a copy of the by-law resolution of their board of directors authorizing them to do so, must also be submitted with the Bid Form in the bid envelope.
  - 4. Joint Venture: Each party of the joint venture shall execute the Bid Form under their respective seals in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

### **7.07 ADDITIONAL BID INFORMATION**

- A. Submit the following Supplements concurrent with bid submission:
  - 1. Document 004323 - Alternates Form: Include the cost variation to the Bid Amount applicable to the Work described in Section [\_\_\_\_\_].

2. Document 004327 - Separate Prices Break-Out Form: Include a listing of separate prices as specifically requested in the Contract Documents.

#### **7.08 SELECTION AND AWARD OF ALTERNATES**

- A. Indicate variation of bid price for Alternates listed on the Bid Form. Unless otherwise indicated, indicate Alternates as a difference in bid price by adding to or deducting from the base bid price.
- B. Bids will be evaluated on the total of the base bid price and all of the Alternates. After determination of the successful bidder, consideration will be given to which Alternates will be included in the Work.

#### **OFFER ACCEPTANCE/REJECTION**

##### **8.01 DURATION OF OFFER**

- A. Bids shall remain open to acceptance and shall be irrevocable for a period of thirty (30) days after the bid closing date.

##### **8.02 ACCEPTANCE OF OFFER**

- A. Owner reserves the right to accept or reject any or all offers.
- B. After acceptance by Owner, Architect on behalf of Owner, will issue to the successful bidder, a written Bid Acceptance.

**END OF SECTION**

SECTION 004100  
BID FORM

THE PROJECT AND THE PARTIES

1.01 TO:

A. ~~Washington Township Board~~

MONROE FIRE PROTECTION DISTRICT

~~1074 N FOX HOLLOW DR, Bloomington IN 47403  
Bloomington, Indiana, 47404~~

3953 S. KENNEDY DR.  
Bloomington IN 47401

1.02 FOR:

A. Owner's Project Number: 23344  
478 East Chambers Pike  
Bloomington, Indiana, 47404

1.03 DATE: \_\_\_\_\_ (BIDDER TO ENTER DATE)

1.04 SUBMITTED BY: (BIDDER TO ENTER NAME AND ADDRESS)

A. Bidder's Full Name \_\_\_\_\_  
1. Address \_\_\_\_\_  
2. City, State, Zip \_\_\_\_\_

1.05 OFFER

- A. Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Bid Documents prepared by Tabor Bruce Architecture & Design for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:
- B. \_\_\_\_\_ dollars  
(\$ \_\_\_\_\_), in lawful money of the United States of America.
- C. We have included the required security deposit as required by the Instruction to Bidders.
- D. We have included the required performance assurance bonds in the Bid Amount as required by the Instructions to Bidders.
1. The cost of the required performance assurance bonds is \_\_\_\_\_ dollars  
(\$ \_\_\_\_\_), in lawful money of the United States of America.
- E. All applicable federal taxes are excluded and State of Indiana taxes are excluded from the Bid Sum.
- F. All Cash and Contingency Allowances described in Section 012100 - Allowances are included in the Bid Sum.

1.06 ACCEPTANCE

- A. This offer shall be open to acceptance and is irrevocable for thirty days from the bid closing date.
- B. If this bid is accepted by Owner within the time period stated above, we will:
1. Execute the Agreement within seven days of receipt of Notice of Award.
  2. Furnish the required bonds within seven days of receipt of Notice of Award.
  3. Commence work within seven days after written Notice to Proceed of this bid.
- C. If this bid is accepted within the time stated, and we fail to commence the Work or we fail to provide the required Bond(s), the security deposit shall be forfeited as damages to Owner by reason of our failure, limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.
- D. In the event our bid is not accepted within the time stated above, the required security deposit shall be returned to the undersigned, in accordance with the provisions of the Instructions to Bidders; unless a mutually satisfactory arrangement is made for its retention and validity for an extended period of time.

1.07 CONTRACT TIME

A. If this Bid is accepted, we will:

- B. Complete the Work in \_\_\_\_\_ calendar weeks from Notice to Proceed.  
(Bidder to enter number of weeks.)

**1.08 UNIT PRICES**

- A. The following are Unit Prices for specific portions of the Work as listed. The following is the list of Unit Prices:
- B. ITEM DESCRIPTION - UNIT QUANTITY - UNIT PRICE - ITEM VALUE
- C. [ ] - [ ] - [ ] - \$ .....
- D. [ ] - [ ] - [ ] - \$ .....
- E. [ ] - [ ] - [ ] - \$ .....
- F. [ ] - [ ] - [ ] - \$ .....

**1.09 CHANGES TO THE WORK**

- A. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:
1. \_\_\_\_\_ percent overhead and profit on the net cost of our own Work;
  2. \_\_\_\_\_ percent on the cost of work done by any Subcontractor.
- B. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus \_\_\_\_\_ of the overhead and profit percentage noted above.

**1.10 ADDENDA**

- A. The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum.
1. Addendum # \_\_\_\_\_ Dated \_\_\_\_\_.
  2. Addendum # \_\_\_\_\_ Dated \_\_\_\_\_.

**1.11 BID FORM SUPPLEMENTS**

- A. The following information is included with Bid submission:
1. Subcontractors: [ ], [ ], [ ].
  2. Alternates: [ ], [ ], [ ].
- B. The following Supplements are attached to this Bid Form and are considered an integral part of this Bid Form:
1. Document 004323 - Alternates Form: Include the cost variations to the Bid Sum applicable to the Work as described in Section [ ].
  2. Document 004327 - Separate Prices Break-Out Form: Include a listing of separate prices as specifically requested in Contract Documents.

**1.12 BID FORM SIGNATURE(S)**

- A. The Corporate Seal of
- B. (Bidder - print the full name of your firm)
- C. was hereunto affixed in the presence of:
- D. \_\_\_\_\_
- E. (Authorized signing officer, Title)
- F. (Seal)
- G. \_\_\_\_\_
- H. (Authorized signing officer, Title)

- 1.13 IF THE BID IS A JOINT VENTURE OR PARTNERSHIP, ADD ADDITIONAL FORMS OF EXECUTION FOR EACH MEMBER OF THE JOINT VENTURE IN THE APPROPRIATE FORM OR FORMS AS ABOVE.**

**END OF SECTION**

**SECTION 004322  
UNIT PRICES FORM**

**PARTICULARS**

1.01 THE FOLLOWING IS THE LIST OF UNIT PRICES REFERENCED IN THE BID SUBMITTED BY:

1.02 (BIDDER) \_\_\_\_\_

1.03 TO (OWNER ): [ \_\_\_\_\_ ]

1.04 DATED \_\_\_\_\_ AND WHICH IS AN INTEGRAL PART OF THE BID FORM.

1.05 THE FOLLOWING ARE UNIT PRICES FOR SPECIFIC PORTIONS OF THE WORK AS LISTED, AND ARE APPLICABLE TO AUTHORIZED VARIATIONS FROM THE CONTRACT DOCUMENTS.

**UNIT PRICE LIST**

2.01 ITEM DESCRIPTION UNIT QUANTITY UNIT VALUE

2.02 CONCRETE SLAB AS SHOWN FOR FIRE BAY PER SQUARE YARD. (Provide AND install)

2.03 \_\_\_\_\_

2.04 \_\_\_\_\_

END OF SECTION

**SECTION 004323  
ALTERNATES FORM**

**PARTICULARS**

1.01 THE FOLLOWING IS THE LIST OF ALTERNATES REFERENCED IN THE BID SUBMITTED BY:

1.02 (BIDDER) \_\_\_\_\_

1.03 TO (OWNER): [ \_\_\_\_\_ ]

1.04 DATED \_\_\_\_\_ AND WHICH IS AN INTEGRAL PART OF THE BID FORM.

**ALTERNATES LIST**

2.01 THE FOLLOWING AMOUNTS SHALL BE ADDED TO OR DEDUCTED FROM THE BID AMOUNT. REFER TO SECTION 012300 - ALTERNATES.

ALTERNATE # 1: ADD / (DEDUCT) \$ \_\_\_\_\_

ALTERNATE # 2: ADD / (DEDUCT) \$ \_\_\_\_\_

ALTERNATE # 3: ADD / (DEDUCT) \$ \_\_\_\_\_

ALTERNATE # 4: ADD / (DEDUCT) \$ \_\_\_\_\_

END OF SECTION

**SECTION 004336  
PROPOSED SUBCONTRACTORS FORM**

**PARTICULARS**

**1.01 HEREWITH IS THE LIST OF SUBCONTRACTORS REFERENCED IN THE BID SUBMITTED BY:**

**1.02 (BIDDER)** \_\_\_\_\_

**1.03 TO (OWNER):** [ \_\_\_\_\_ ]

**1.04 DATED** \_\_\_\_\_ **AND WHICH IS AN INTEGRAL PART OF THE BID FORM.**

**1.05 THE FOLLOWING WORK WILL BE PERFORMED (OR PROVIDED) BY SUBCONTRACTORS AND COORDINATED BY US:**

**LIST OF SUBCONTRACTORS**

**WORK SUBJECT SUBCONTRACTOR NAME**

A. HVAC \_\_\_\_\_

B. Plumbing \_\_\_\_\_

C. Electrical \_\_\_\_\_

D. \_\_\_\_\_

**END OF SECTION**



**SECTION 005200  
AGREEMENT FORM**

**PART 1 GENERAL**

**1.01 FORM OF AGREEMENT**

**1.02 THE AGREEMENT TO BE EXECUTED IS ATTACHED FOLLOWING THIS PAGE.**

**1.03 RELATED REQUIREMENTS**

A. Section 007200 - General Conditions.

**PART 2 PRODUCTS (NOT USED)**

**PART 3 EXECUTION (NOT USED)**

**END OF SECTION**

AIA A101-2017.

SECTION 007200  
GENERAL CONDITIONS

FORM OF GENERAL CONDITIONS

1.01 THE GENERAL CONDITIONS APPLICABLE TO THIS CONTRACT IS ATTACHED  
FOLLOWING THIS PAGE.

END OF SECTION

AIA A201-2007

**SECTION 011000  
SUMMARY**

**PART 1 GENERAL**

**1.01 PROJECT**

**MONROE FIRE PROTECTION DISTRICT - STATION 26**

- A. Project Name: ~~Washington Township Fire Station~~
- B. Owner's Name: [\_\_\_\_\_].
- C. Additional Project contact information is specified in Section 000103 - Project Directory.
- D. The Project consists of the construction of [\_\_\_\_\_].

**1.02 CONTRACT DESCRIPTION**

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 005200 - Agreement Form.

**1.03 OWNER OCCUPANCY**

- A. Owner intends to occupy the Project upon Substantial Completion.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.
- C. Schedule the Work to accommodate Owner occupancy.

**1.04 CONTRACTOR USE OF SITE AND PREMISES**

- A. Construction Operations: [\_\_\_\_\_].
  - 1. Locate and conduct construction activities in ways that will limit disturbance to site.
- B. Provide access to and from site as required by law and by Owner:
  - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
  - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.

**END OF SECTION**

**SECTION 012000  
PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

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

**1.02 RELATED REQUIREMENTS**

- A. Section 005000 - Contracting Forms and Supplements: Forms to be used.
- B. Section 007200 - General Conditions: Additional requirements for progress payments, final payment, changes in the Work.
- C. Section 012100 - Allowances: Payment procedures relating to allowances.

**1.03 SCHEDULE OF VALUES**

- A. Use Schedule of Values Form: AIA G703, edition stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- E. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization.
- F. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.
- G. Revise schedule to list approved Change Orders, with each Application For Payment.

**1.04 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Use Form AIA G702 and Form AIA G703, edition stipulated in the Agreement.
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.
- F. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- G. Submit three hard-copies of each Application for Payment.
- H. Include the following with the application:
  - 1. Transmittal letter as specified for submittals in Section 013000.
  - 2. Construction progress schedule, revised and current as specified in Section 013000.
- I. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

**1.05 MODIFICATION PROCEDURES**

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.

2. Promptly execute the change.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within [ ] days.
- D. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
- E. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

**1.06 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

**END OF SECTION**

**SECTION 012300  
ALTERNATES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Description of Alternates.
- B. Procedures for pricing Alternates.

**1.02 RELATED REQUIREMENTS**

- A. Document 002113 - Instructions to Bidders: Instructions for preparation of pricing for Alternates.
- B. Document 004323 - Alternates Form: List of Alternates as supplement to Bid Form.

**1.03 ACCEPTANCE OF ALTERNATES**

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

**1.04 SCHEDULE OF ALTERNATES** **NO ALTERNATES AT THIS TIME**

- A. ~~Alternate No. One - Provide minimum 8 inch thick concrete slab in the me bay room. Base bid includes the concrete and labor.~~
  - 1. Alternate Item: Section [ ] and Drawing number SB101 including [ ].
- B. ~~Alternate No. Two - Alternates shall include electrical outlets as required by schedule lighting. Base bid shall include overhead door operators and wiring.~~
  - 1. Alternate Item: Section [ ] and Drawing number Electrical drawings including [ ].
- C. ~~Alternate No. Three - Provide all concrete parking as noted (Note C), on plan sheet C201, east of parking. Base bid shall include gravel base as noted.~~
  - 1. Alternate Item: Section [ ] and Drawing number C201 including [ ].
- D. ~~Alternate No. Four - Provide all kitchen cabinets, countertop, and appliances (allowance for appliances of \$1,000.00). Base bid shall include providing and capping all required plumbing and electrical to serve items.~~
  - 1. Alternate Item: Section [ ] and Drawing number Plans including [ ].

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

**SECTION 013000  
ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Construction progress schedule.
- F. Submittals for review, information, and project closeout.
- G. Number of copies of submittals.
- H. Requests for Interpretation (RFI) procedures.
- I. Submittal procedures.

**1.02 RELATED REQUIREMENTS**

**1.03 REFERENCE STANDARDS**

- A. AIA G716 - Request for Information 2004.
- B. AIA G810 - Transmittal Letter 2001.

**1.04 GENERAL ADMINISTRATIVE REQUIREMENTS**

- A. Comply with requirements of Section 017000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
  - 1. Requests for Interpretation (RFI).
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Coordination drawings.
  - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
  - 11. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
  - 5. Designation of personnel representing the parties to Contract, [ ] and Architect.
  - 6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  - 7. Scheduling.

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

### **3.02 SITE MOBILIZATION MEETING**

- A. Owner will schedule meeting at the Project site prior to Contractor occupancy.
- B. Attendance Required:
  - 1. Contractor.
  - 2. Owner.
  - 3. Architect.
  - 4. Contractor's superintendent.
  - 5. Major subcontractors.
- C. Agenda:
  - 1. Use of premises by Owner and Contractor.
  - 2. Owner's requirements.
  - 3. Construction facilities and controls provided by Owner.
  - 4. Temporary utilities provided by Owner.
  - 5. Survey and building layout.
  - 6. Security and housekeeping procedures.
  - 7. Schedules.
  - 8. Application for payment procedures.
  - 9. Procedures for testing.
  - 10. Procedures for maintaining record documents.
  - 11. Requirements for start-up of equipment.
  - 12. Inspection and acceptance of equipment put into service during construction period.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.03 PROGRESS MEETINGS**

- A. Schedule and administer meetings throughout progress of the work at maximum monthly intervals.
- B. Attendance Required:
  - 1. Contractor.
  - 2. Owner.
  - 3. Architect.
  - 4. Contractor's superintendent.
  - 5. Major subcontractors.
- C. Agenda:
  - 1. Review minutes of previous meetings.
  - 2. Review of work progress.
  - 3. Field observations, problems, and decisions.
  - 4. Identification of problems that impede, or will impede, planned progress.
  - 5. Review of submittals schedule and status of submittals.
  - 6. Maintenance of progress schedule.
  - 7. Corrective measures to regain projected schedules.
  - 8. Planned progress during succeeding work period.
  - 9. Maintenance of quality and work standards.
  - 10. Effect of proposed changes on progress schedule and coordination.
  - 11. Other business relating to work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.04 CONSTRUCTION PROGRESS SCHEDULE**

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.



- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
  - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

### **3.05 REQUESTS FOR INTERPRETATION (RFI)**

- A. Definition: A request seeking one of the following:
  - 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
  - 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
  - 1. Prepare a separate RFI for each specific item.
    - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
    - b. Do not forward requests which solely require internal coordination between subcontractors.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
  - 1. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
    - a. Approval of submittals (use procedures specified elsewhere in this section).
- E. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- F. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
  - 1. Indicate current status of every RFI. Update log promptly and on a regular basis.
  - 2. Note dates of when each request is made, and when a response is received.
- G. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
- H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.

### **3.06 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.
  - 2. Shop drawings.
  - 3. Samples for selection.
  - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800 - Closeout

Submittals.

### **3.07 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

### **3.08 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 017800 - Closeout Submittals:
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties.
  - 4. Bonds.
  - 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

### **3.09 NUMBER OF COPIES OF SUBMITTALS**

- A. Electronic Documents: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.
- B. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
  - 1. After review, produce duplicates.
  - 2. Retained samples will not be returned to Contractor unless specifically so stated.

### **3.10 SUBMITTAL PROCEDURES**

- A. General Requirements:
  - 1. Use a single transmittal for related items.
  - 2. Transmit using approved form.
    - a. Use Contractor's form, subject to prior approval by Architect.
  - 3. Sequentially identify each item. For revised submittals use original number and a sequential numerical suffix.
  - 4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
  - 5. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
  - 6. Schedule submittals to expedite the Project, and coordinate submission of related items.
    - a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
    - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.
  - 7. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
  - 8. Provide space for Contractor and Architect review stamps.
  - 9. When revised for resubmission, identify all changes made since previous submission.
  - 10. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
- B. Shop Drawing Procedures:

1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
  2. Do not reproduce Contract Documents to create shop drawings.
  3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.
- C. Samples Procedures:
1. Transmit related items together as single package.
  2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
  3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

### **3.11 SUBMITTAL REVIEW**

- A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action.
- B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.
- C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.
- D. Architect's and consultants' actions on items submitted for review:
1. Authorizing purchasing, fabrication, delivery, and installation:
    - a. "Approved", or language with same legal meaning.
    - b. "Approved as Noted, Resubmission not required", or language with same legal meaning.
      - 1) At Contractor's option, submit corrected item, with review notations acknowledged and incorporated.
    - c. "Approved as Noted, Resubmit for Record", or language with same legal meaning.
  2. Not Authorizing fabrication, delivery, and installation:
- E. Architect's and consultants' actions on items submitted for information:
1. Items for which no action was taken:
    - a. "Received" - to notify the Contractor that the submittal has been received for record only.
  2. Items for which action was taken:
    - a. "Reviewed" - no further action is required from Contractor.

**END OF SECTION**

**SECTION 013216  
CONSTRUCTION PROGRESS SCHEDULE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Construction progress schedule, bar chart type.

**1.02 RELATED SECTIONS**

- A. Section 011000 - Summary: Work sequence.

**1.03 REFERENCE STANDARDS**

- A. AGC (CPSM) - Construction Planning and Scheduling Manual 2004.

**1.04 SUBMITTALS**

- A. Within 10 days after date of Agreement, submit preliminary schedule.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Submit updated schedule with each Application for Payment.

**1.05 SCHEDULE FORMAT**

- A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 CONTENT**

- A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- D. Provide legend for symbols and abbreviations used.

**3.02 BAR CHARTS**

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.

**END OF SECTION**

**SECTION 015713**  
**TEMPORARY EROSION AND SEDIMENT CONTROL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Performance bond.
- E. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

**1.02 RELATED REQUIREMENTS**

- A. Section 311000 - Site Clearing: Limits on clearing; disposition of vegetative clearing debris.
- B. Section 312200 - Grading: Temporary and permanent grade changes for erosion control.
- C. Section 321123 - Aggregate Base Courses: Temporary and permanent roadways.
- D. Section 329219 - Seeding: Permanent turf for erosion control.

**1.03 REFERENCE STANDARDS**

- A. ASTM D4355/D4355M - Standard Test Method for Deterioration of Geotextiles by Exposure to Light, Moisture, and Heat in a Xenon Arc-Type Apparatus 2021.
- B. ASTM D4491/D4491M - Standard Test Methods for Water Permeability of Geotextiles by Permittivity 2021.
- C. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles 2015.
- D. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles 2015a.
- E. ASTM D4751 - Standard Test Methods for Determining Apparent Opening Size of a Geotextile 2021a.
- F. ASTM D4873/D4873M - Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples 2017 (Reapproved 2021).
- G. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES), Construction General Permit Current Edition.
- H. FHWA FLP-94-005 - Best Management Practices for Erosion and Sediment Control 1995.

**1.04 PERFORMANCE REQUIREMENTS**

- A. Comply with requirements of EPA (NPDES) for erosion and sedimentation control, as specified by the NPDES, for Phases I and II, and in compliance with requirements of Construction General Permit (CGP), whether the project is required by law to comply or not.
- B. Also comply with all more stringent requirements of State of Indiana Erosion and Sedimentation Control Manual.
- C. Comply with all requirements of Monroe County for erosion and sedimentation control .
- D. Develop and follow an Erosion and Sedimentation Prevention Plan and submit periodic inspection reports.
- E. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
- F. Provide to Owner a Performance Bond covering erosion and sedimentation preventive measures only, in an amount equal to 100 percent of the cost of erosion and sedimentation control work.
- G. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.

- H. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
  - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
  - 2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.
- I. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
  - 1. Control movement of sediment and soil from temporary stockpiles of soil.
  - 2. Prevent development of ruts due to equipment and vehicular traffic.
  - 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- J. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
  - 1. Prevent windblown soil from leaving the project site.
  - 2. Prevent tracking of mud onto public roads outside site.
  - 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
  - 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- K. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
  - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
  - 2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
- L. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
  - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
- M. Open Water: Prevent standing water that could become stagnant.
- N. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

#### **1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Erosion and Sedimentation Control Plan:
  - 1. Include:
    - a. Site plan identifying soils and vegetation, existing erosion problems, and areas vulnerable to erosion due to topography, soils, vegetation, or drainage.
    - b. Site plan showing grading; new improvements; temporary roads, traffic accesses, and other temporary construction; and proposed preventive measures.
    - c. Where extensive areas of soil will be disturbed, include storm water flow and volume calculations, soil loss predictions, and proposed preventive measures.
    - d. Schedule of temporary preventive measures, in relation to ground disturbing activities.
    - e. Other information required by law.
    - f. Format required by law is acceptable, provided any additional information specified is also included.
  - 2. Obtain the approval of the Plan by authorities having jurisdiction.
  - 3. Obtain the approval of the Plan by Owner.
- C. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate

actual minimum average roll values; identify fabric by roll identification numbers.

- D. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Mulch: Use one of the following:
  - 1. Straw or hay.
  - 2. Erosion control matting or netting.
- B. Grass Seed For Temporary Cover: Select a species appropriate to climate, planting season, and intended purpose. If same area will later be planted with permanent vegetation, do not use species known to be excessively competitive or prone to volunteer in subsequent seasons.
- C. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths:
  - 1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance with ASTM D4751.
  - 2. Permittivity:  $0.05 \text{ sec}^{-1}$ , minimum, when tested in accordance with ASTM D4491/D4491M.
  - 3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D4355/D4355M after 500 hours exposure.
  - 4. Tensile Strength: 100 pounds-force, minimum, in cross-machine direction; 124 pounds-force, minimum, in machine direction; when tested in accordance with ASTM D4632/D4632M.
  - 5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D4632/D4632M.
  - 6. Tear Strength: 55 pounds-force, minimum, when tested in accordance with ASTM D4533/D4533M.
  - 7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
- D. Silt Fence Posts: One of the following, minimum 5 feet long:
- E. Gravel: See Section 321123 for aggregate.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

### **3.02 PREPARATION**

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

### **3.03 SCOPE OF PREVENTIVE MEASURES**

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. Construction Entrances: Traffic-bearing aggregate surface.
  - 1. Width: As required; 20 feet, minimum.
  - 2. Length: 50 feet, minimum.
  - 3. Provide at each construction entrance from public right-of-way.
  - 4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.
- C. Linear Sediment Barriers: Made of silt fences.
  - 1. Provide linear sediment barriers:
    - a. Along downhill perimeter edge of disturbed areas, including soil stockpiles.
  - 2. Space sediment barriers with the following maximum slope length upslope from barrier:
    - a. Slope of Less Than 2 Percent: 100 feet.
    - b. Slope Between 2 and 5 Percent: 75 feet.
    - c. Slope Between 5 and 10 Percent: 50 feet.
    - d. Slope Between 10 and 20 Percent: 25 feet.

- e. Slope Over 20 Percent: 15 feet.
- D. Storm Drain Curb Inlet Sediment Trap: Protect each curb inlet using one of the following measures:
  1. Filter fabric wrapped around hollow concrete blocks blocking entire inlet face area; use one piece of fabric wrapped at least 1-1/2 times around concrete blocks and secured to prevent dislodging; orient cores of blocks so runoff passes into inlet.
  2. Straw bale row blocking entire inlet face area; anchor into pavement.
- E. Storm Drain Drop Inlet Sediment Traps: As detailed on drawings.
- F. Temporary Splash Pads: Stone aggregate over filter fabric; size to suit application; provide at downspout outlets and storm water outlets.
- G. Soil Stockpiles: Protect using one of the following measures:
  1. Cover with polyethylene film, secured by placing soil on outer edges.
  2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves, or 6 inches of straw or hay.
- H. Mulching: Use only for areas that may be subjected to erosion for less than 6 months.
- I. Temporary Seeding: Use where temporary vegetated cover is required.

### 3.04 INSTALLATION

- A. Traffic-Bearing Aggregate Surface:
  1. Excavate minimum of 6 inches.
  2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
  3. Place and compact at least 6 inches of 1 1/2 to 3 1/2 inch diameter stone.
- B. Silt Fences:
  1. Store and handle fabric in accordance with ASTM D4873/D4873M.
  2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
  3. Where slope gradient is steeper than 3:1 or barriers will be in place over 6 months, use nominal 28 inch high barriers, minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
  4. Where slope gradient is steeper than 3:1 and vertical height of slope between barriers is more than 20 feet, use nominal 32 inch high barriers with woven wire reinforcement and steel posts spaced at 4 feet maximum, with fabric embedded at least 6 inches in ground.
  5. Install with top of fabric at nominal height and embedment as specified.
  6. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
  7. Wherever runoff will flow around end of barrier or over the top, provide temporary splash pad or other outlet protection; at such outlets in the run of the barrier, make barrier not more than 12 inches high with post spacing not more than 4 feet.
- C. Temporary Seeding:
  1. When hydraulic seeder is used, seedbed preparation is not required.
  2. When surface soil has been sealed by rainfall or consists of smooth undisturbed cut slopes, and conventional or manual seeding is to be used, prepare seedbed by scarifying sufficiently to allow seed to lodge and germinate.
  3. If temporary mulching was used on planting area but not removed, apply nitrogen fertilizer at 1 pound per 1000 sq ft.
  4. On soils of very low fertility, apply 10-10-10 fertilizer at rate of 12 to 16 pounds per 1000 sq ft.
  5. Incorporate fertilizer into soil before seeding.
  6. Apply seed uniformly; if using drill or cultipacker seeders place seed 1/2 to 1 inch deep.
  7. Irrigate as required to thoroughly wet soil to depth that will ensure germination, without causing runoff or erosion.
  8. Repeat irrigation as required until grass is established.



### **3.05 MAINTENANCE**

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
  - 1. Promptly replace fabric that deteriorates unless need for fence has passed.
  - 2. Remove silt deposits that exceed one-third of the height of the fence.
  - 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- D. Clean out temporary sediment control structures weekly and relocate soil on site.
- E. Place sediment in appropriate locations on site; do not remove from site.

### **3.06 CLEAN UP**

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

**END OF SECTION**

**SECTION 015813  
TEMPORARY PROJECT SIGNAGE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Project identification sign.

**1.02 QUALITY ASSURANCE**

- A. Design sign and structure to withstand 50 miles/hr wind velocity.
- B. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.

**PART 2 PRODUCTS**

**2.01 SIGN MATERIALS**

- A. Structure and Framing: New, wood, structurally adequate.
- B. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inch thick, standard large sizes to minimize joints.
- C. Rough Hardware: Galvanized.
- D. Paint and Primers: Exterior quality, two coats; sign background of [ ] color.
- E. Lettering: Exterior quality paint, contrasting colors.

**2.02 PROJECT IDENTIFICATION SIGN**

- A. One painted sign of construction, design, and content indicated on drawings, location designated.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install project identification sign within 30 days after date fixed by Notice to Proceed.
- B. Erect at location of high public visibility adjacent to main entrance to site.
- C. Install sign surface plumb and level, with butt joints. Anchor securely.

**END OF SECTION**

**SECTION 017800  
CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Operation and maintenance data.
- B. Warranties and bonds.

**1.02 RELATED REQUIREMENTS**

- A. Section 007200 - General Conditions and 007300 - Supplementary Conditions: Performance bond and labor and material payment bonds, warranty, and correction of work.
- B. Section 013000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

**PART 3 EXECUTION**

**2.01 OPERATION AND MAINTENANCE DATA**

- A. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- B. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- C. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

**2.02 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES**

- A. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

**2.03 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS**

- A. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

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

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

#### **2.05 WARRANTIES AND BONDS**

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

**END OF SECTION**

**SECTION 031000  
CONCRETE FORMING AND ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Formwork for cast-in-place concrete, with shoring, bracing and anchorage.
- B. Form accessories.
- C. Form stripping.

**1.02 RELATED REQUIREMENTS**

- A. Section 032000 - Concrete Reinforcing.
- B. Section 033000 - Cast-in-Place Concrete.
- C. Section 051200 - Structural Steel Framing: Placement of embedded steel anchors and plates in cast-in-place concrete.

**1.03 REFERENCE STANDARDS**

- A. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials 2010 (Reapproved 2015).
- B. ACI 301 - Specifications for Structural Concrete 2016.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- D. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2019.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.

**1.05 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with Highways standards of the State of Indiana.

**PART 2 PRODUCTS**

**2.01 FORMWORK - GENERAL**

- A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.
- B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.
- C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

**2.02 WOOD FORM MATERIALS**

- A. Form Materials: At the discretion of the Contractor.

**2.03 FORMWORK ACCESSORIES**

- A. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
- B. Embedded Anchor Shapes, Plates, Angles and Bars: As specified in Section 051200.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with drawings.

**3.02 EARTH FORMS**

- A. Earth forms are not permitted.

### **3.03 ERECTION - FORMWORK**

- A. Erect formwork, shoring and bracing to achieve design requirements, in accordance with requirements of ACI 301.
- B. Provide bracing to ensure stability of formwork. Shore or strengthen formwork subject to overstressing by construction loads.

### **3.04 APPLICATION - FORM RELEASE AGENT**

- A. Apply form release agent on formwork in accordance with manufacturer's recommendations.

### **3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS**

- A. Locate and set in place items that will be cast directly into concrete.
- B. Coordinate with work of other sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other work.
- C. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- D. Install waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement. Heat seal joints so they are watertight.

### **3.06 FORM REMOVAL**

- A. Do not remove forms or bracing until concrete has gained sufficient strength to carry its own weight and imposed loads.

**END OF SECTION**

**SECTION 032000  
CONCRETE REINFORCING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Reinforcing steel for cast-in-place concrete.
- B. Supports and accessories for steel reinforcement.

**1.02 RELATED REQUIREMENTS**

- A. Section 031000 - Concrete Forming and Accessories.
- B. Section 033000 - Cast-in-Place Concrete.

**1.03 REFERENCE STANDARDS**

- A. ACI 301 - Specifications for Structural Concrete 2016.
- B. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).
- C. ASTM A184/A184M - Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement 2019.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- E. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement 2016.
- F. ASTM A996/A996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement 2016.
- G. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- H. CRSI (DA4) - Manual of Standard Practice 2009.

**1.04 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 301.

**PART 2 PRODUCTS**

**2.01 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
  - 1. Plain billet-steel bars.
- B. Reinforcing Steel: ASTM A706/A706M, deformed low-alloy steel bars.
  - 1. Unfinished.
- C. Reinforcing Steel: Deformed bars, ASTM A996/A996M Grade 40 (280), Type A.
- D. Stirrup Steel: ASTM A1064/A1064M steel wire, unfinished.
- E. Reinforcement Accessories:
  - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.
  - 2. Provide stainless steel components for placement within 1-1/2 inches of weathering surfaces.

**2.02 RE-BAR SPLICING:**

**2.03 FABRICATION**

- A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.
- B. Welding of reinforcement is not permitted.
- C. Locate reinforcing splices not indicated on drawings at point of minimum stress.

**PART 3 EXECUTION**

**3.01 PLACEMENT**

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.

C. Accommodate placement of formed openings.

**END OF SECTION**



**SECTION 033000  
CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Floors and slabs on grade.
- B. Concrete foundations and anchor bolts for pre-engineered building.
- C. Concrete reinforcement.
- D. Joint devices associated with concrete work.
- E. Concrete curing.

**1.02 RELATED REQUIREMENTS**

- A. Section 031000 - Concrete Forming and Accessories: Forms and accessories for formwork.
- B. Section 032000 - Concrete Reinforcing.
- C. Section 033511 - Concrete Floor Finishes: Densifiers, hardeners, applied coatings, and polishing.
- D. Section 079200 - Joint Sealants: Products and installation for sealants and joint fillers for saw cut joints and isolation joints in slabs.

**1.03 REFERENCE STANDARDS**

- A. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials 2010 (Reapproved 2015).
- B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete 1991 (Reapproved 2009).
- C. ACI 301 - Specifications for Structural Concrete 2016.
- D. ACI 302.1R - Guide to Concrete Floor and Slab Construction 2015.
- E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete 2000 (Reapproved 2009).
- F. ACI 305R - Guide to Hot Weather Concreting 2010.
- G. ACI 306R - Guide to Cold Weather Concreting 2016.
- H. ACI 308R - Guide to External Curing of Concrete 2016.
- I. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).
- J. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.
- K. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens 2021.
- L. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2021b.
- M. ASTM C1602/C1602M - Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete 2012.
- N. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs 2018a.
- O. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs 2017.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
  - 1. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.
- C. Mix Design: Submit proposed concrete mix design.
  - 1. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.

- D. Samples: Submit samples of underslab vapor retarder to be used.
- E. Test Reports: Submit report for each test or series of tests specified.
- F. Sustainable Design Submittal: If any fly ash, ground granulated blast furnace slag, silica fume, rice hull ash, or other waste material is used in mix designs to replace Portland cement, submit the total volume of concrete cast in place, mix design(s) used showing the quantity of portland cement replaced, reports showing successful cylinder testing, and temperature on day of pour if cold weather mix is used.

#### **1.05 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.
- D. For slabs required to include moisture vapor reducing admixture (MVRA), do not proceed with placement unless manufacturer's representative is present for every day of placement.

### **PART 2 PRODUCTS**

#### **2.01 FORMWORK**

- A. Comply with requirements of Section 031000.

#### **2.02 REINFORCEMENT MATERIALS**

- A. Comply with requirements of Section 032000.

#### **2.03 CONCRETE MATERIALS**

- A. Cement: ASTM C150/C150M, Type I - Normal Portland type.
  - 1. Acquire cement for entire project from same source.
- B. Fine and Coarse Aggregates: ASTM C33/C33M.
- C. Water: ASTM C1602/C1602M; clean, potable, and not detrimental to concrete.

#### **2.04 ADMIXTURES**

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.

#### **2.05 ACCESSORY MATERIALS**

- A. Underslab Vapor Retarder:
  - 1. Sheet Material: ASTM E1745, Class A; stated by manufacturer as suitable for installation in contact with soil or granular fill under concrete slabs. Single ply polyethylene is prohibited.
  - 2. Accessory Products: Vapor retarder manufacturer's recommended tape, adhesive, mastic, prefabricated boots, etc., for sealing seams and penetrations.

#### **2.06 BONDING AND JOINTING PRODUCTS**

- A. Slab Isolation Joint Filler: 1/2 inch thick, height equal to slab thickness, with removable top section that will form 1/2 inch deep sealant pocket after removal.

#### **2.07 CONCRETE MIX DESIGN**

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
  - 1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- B. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
  - 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- C. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.

#### **2.08 MIXING**

- A. Transit Mixers: Comply with ASTM C94/C94M.
- B. Adding Water: If concrete arrives on-site with slump less than suitable for placement, do not add water that exceeds the maximum water-cement ratio or exceeds the maximum

permissible slump.

- C. Do not use expansive component in same concrete batch with MVRA or PIA.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

#### **3.02 PREPARATION**

- A. Verify that forms are clean and free of rust before applying release agent.
- B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- C. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Comply with ASTM E1643. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

#### **3.03 PLACING CONCRETE**

- A. Place concrete in accordance with ACI 304R.

#### **3.04 SLAB JOINTING**

- A. Locate joints as indicated on drawings.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
- D. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch thick blade and cut at least 1 inch deep but not less than one quarter (1/4) the depth of the slab.

#### **3.05 FLOOR FLATNESS AND LEVELNESS TOLERANCES**

- A. Maximum Variation of Surface Flatness:
  - 1. Exposed Concrete Floors: 1/4 inch in 10 feet.
  - 2. Under Seamless Resilient Flooring: 1/4 inch in 10 feet.
  - 3. Under Carpeting: 1/4 inch in 10 feet.
- B. Correct the slab surface if tolerances are less than specified.
- C. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

#### **3.06 CONCRETE FINISHING**

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch or more in height. Provide finish as follows:
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
  - 1. Surfaces to Receive Thin Floor Coverings: "Steel trowel" as described in ACI 302.1R; thin floor coverings include carpeting, resilient flooring, seamless flooring, resinous matrix terrazzo, thin set quarry tile, and thin set ceramic tile.
  - 2. Other Surfaces to Be Left Exposed: Trowel as described in ACI 302.1R, minimizing burnish marks and other appearance defects.

#### **3.07 CURING AND PROTECTION**

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

### **3.08 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 014000 - Quality Requirements.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Compressive Strength Tests: ASTM C39/C39M, for each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cubic yards or less of each class of concrete placed.
- D. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.

### **3.09 DEFECTIVE CONCRETE**

- A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not complying with required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.

### **3.10 PROTECTION**

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

### **3.11 SCHEDULE - CONCRETE TYPES AND FINISHES**

- A. Foundation Walls: 3,000 pounds per square inch 28 day concrete, form finish with honeycomb filled surface.
- B. Exposed Portico Structure: 4,000 pounds per square inch 28 day concrete, air entrained, smooth rubbed finish.

**END OF SECTION**

**SECTION 061000  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Structural dimension lumber framing.
- B. Nonstructural dimension lumber framing.
- C. Rough opening framing for doors, windows, and roof openings.
- D. Sheathing.
- E. Underlayment.
- F. Roofing nailers.
- G. Roofing cant strips.
- H. Preservative treated wood materials.
- I. Miscellaneous framing and sheathing.
- J. Concealed wood blocking, nailers, and supports.

**1.02 REFERENCE STANDARDS**

- A. ANSI A208.1 - American National Standard for Particleboard 2016.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing 2003 (Reapproved 2017).
- D. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2019.
- E. AWC (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings 2018.
- F. AWPA U1 - Use Category System: User Specification for Treated Wood 2018.
- G. PS 2 - Performance Standard for Wood-Based Structural-Use Panels 2010.
- H. PS 20 - American Softwood Lumber Standard 2020.

**1.03 QUALITY ASSURANCE**

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle):
  - 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
  - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

**1.04 DELIVERY, STORAGE, AND HANDLING**

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

**PART 2 PRODUCTS**

**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. 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.
  - 2. Grading Agency: Grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee at [www.alsc.org](http://www.alsc.org), and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

**2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.

- B. Moisture Content: S-dry or MC19.
- C. Stud Framing (2 by 2 through 2 by 6 ):
  - 1. Grade: No. 2.
- D. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 ):
- E. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  - 1. Lumber: S4S, No. 2 or Standard Grade.
  - 2. Boards: Standard or No. 3.

### **2.03 EXPOSED DIMENSION LUMBER**

- A. Sizes: Nominal sizes as indicated on drawings.
- B. Surfacing: S4S.
- C. Moisture Content: S-dry or MC19.

### **2.04 STRUCTURAL COMPOSITE LUMBER**

- A. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.

### **2.05 CONSTRUCTION PANELS**

- A. Roof Sheathing: Particleboard, ANSI A208.1, Grade M-3 EXTERIOR GLUE; square edges, with panel clips.
- B. Roof Sheathing: Oriented strand board wood structural panel; PS 2.
  - 1. Grade: Structural 1 Sheathing.
  - 2. Bond Classification: Exposure 1.
  - 3. Performance Category: 5/8 PERF CAT.
  - 4. Span Rating: 40/20.
  - 5. Exposure Time: Sheathing will not delaminate or require sanding due to moisture absorption from exposure to weather for up to 500 days.
  - 6. Provide fastening guide on top panel surface with separate markings indicating fastener spacing for 16 inches and 24 inches on center, respectively.
- C. Roof Sheathing: Oriented strand board structural wood panel, PS 2, with factory laminated roofing underlayment layer.
  - 1. Sheathing Panel:
    - a. Grade: Structural 1 Sheathing.
    - b. Size: 4 feet wide by 8 feet long.
    - c. Performance Category: 5/8 PERF CAT.
    - d. Span Rating: 40/20.
  - 2. Provide fastening guide on top panel surface with separate markings indicating fastener spacing for 16 inches and 24 inches on center.
- D. Wall Sheathing: Particleboard, ANSI A208.1, Grade M-3 EXTERIOR GLUE.

### **2.06 FACTORY WOOD TREATMENT**

- A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.
- B. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.

### **3.02 INSTALLATION - GENERAL**

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

- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

### **3.03 FRAMING INSTALLATION**

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.
- B. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- C. Install structural members full length without splices unless otherwise specifically detailed.
- D. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes, AWC (WFCM) Wood Frame Construction Manual, and [\_\_\_\_\_].
- E. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- F. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

### **3.04 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 framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to authorities having jurisdiction may be used in lieu of solid wood blocking.
- 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.

### **3.05 ROOF-RELATED CARPENTRY**

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

### **3.06 INSTALLATION OF CONSTRUCTION PANELS**

- A. Subflooring/Underlayment Combination: Glue and nail to framing; staples are not permitted.
- B. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
  - 1. Nail panels to framing; staples are not permitted.
- C. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails, screws, or staples.

**END OF SECTION**

**SECTION 061753  
SHOP-FABRICATED WOOD TRUSSES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Shop fabricated wood trusses for roof framing.
- B. Bridging, bracing, and anchorage.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Installation requirements for miscellaneous framing.

**1.03 REFERENCE STANDARDS**

- A. ANSI/TPI 1 - National Design Standard for Metal-Plate-Connected Wood Truss Construction 2014.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- C. SPIB (GR) - Grading Rules 2014.
- D. TPI BCSI 1 - Building Component Safety Information Booklet: The Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses 2018.
- E. TPI DSB-89 - Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses 1989.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Show truss configurations, sizes, spacing, size and type of plate connectors, cambers, framed openings, bearing and anchor details, and bridging and bracing.
  - 1. Include identification of engineering software used for design.

**1.05 QUALITY ASSURANCE**

- A. Designer Qualifications: Perform design by or under direct supervision of a Professional [ ] Engineer experienced in design of this Work and licensed in the State in which the Project is located.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Handle and erect trusses in accordance with TPI BCSI 1.
- B. Store trusses in vertical position resting on bearing ends.

**PART 2 PRODUCTS**

**2.01 TRUSSES**

- A. Wood Trusses: Designed and fabricated in accordance with ANSI/TPI 1 and TPI DSB-89 to achieve structural requirements indicated.
  - 1. Species and Grade: Southern Pine, SPIB (GR) Grade [ ].
  - 2. Design Roof Live and Dead Load: 40 lbs/sq ft.
  - 3. Roof Deflection: 1/240, maximum.

**2.02 MATERIALS**

- A. Lumber:
  - 1. Moisture Content: Between 7 and 9 percent.
  - 2. Lumber fabricated from old growth timber is not permitted.
- B. Steel Connectors: Hot-dipped galvanized steel sheet, ASTM A653/A653M Structural Steel (SS) Grade 33/230, with G90/Z275 coating; die stamped with integral teeth; thickness as indicated.
- C. Truss Bridging: Type, size and spacing recommended by truss manufacturer.

**2.03 ACCESSORIES**

- A. Wood Blocking, Bridging, Plates, and Miscellaneous Framing: Softwood lumber, any species, construction grade, 19 percent maximum and 7 percent minimum moisture content.



- B. Wood Blocking, Bridging, Plates, and Miscellaneous Framing: As specified in Section 061000.
- C. Fasteners: Electrogalvanized steel, type to suit application.
- D. Bearing Plates: Electrogalvanized steel.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that supports and openings are ready to receive trusses.

#### **3.02 PREPARATION**

- A. Coordinate placement of bearing items.

#### **3.03 ERECTION**

- A. Install trusses in accordance with manufacturer's instructions and TPI DSB-89 and TPI BCSI 1; maintain a copy of each TPI document on site until installation is complete.
- B. Set members level and plumb, in correct position.
- C. Install permanent bridging and bracing.

#### **3.04 TOLERANCES**

- A. Framing Members: 1/2 inch maximum, from true position.

**END OF SECTION**

**SECTION 062000  
FINISH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Finish carpentry items.
- B. Wood casings and moldings.
- C. Hardware and attachment accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 064100 - Architectural Wood Casework: Shop fabricated custom cabinet work.

**1.03 REFERENCE STANDARDS**

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.
- B. ANSI A135.4 - Basic Hardboard 2012 (R2020).
- C. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- D. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 4.0 2021.
- E. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate the work with plumbing rough-in, electrical rough-in, and installation of associated and adjacent components.

**1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

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

**PART 2 PRODUCTS**

**2.01 FINISH CARPENTRY ITEMS**

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Interior Woodwork Items:
  - 1. Moldings, Bases, Casings, and Miscellaneous Trim: Clear white pine; prepare for paint finish.
  - 2. Window Sills: Clear fir; prepare for transparent finish.

**2.02 PLASTIC LAMINATE MATERIALS**

- A. Plastic Laminate: NEMA LD 3; textured, low gloss finish.

**2.03 FASTENINGS**

- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.

**2.04 ACCESSORIES**

- A. Adhesive: Type recommended by fabricator to suit application.

**2.05 FABRICATION**

- A. Shop assemble work for delivery to site, permitting passage through building openings.

- B. Cap exposed plastic laminate finish edges with material of same finish and pattern.
- C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.
- D. Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

#### **3.02 INSTALLATION**

- A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

#### **3.03 TOLERANCES**

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

**END OF SECTION**

**SECTION 064100**  
**ARCHITECTURAL WOOD CASEWORK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Specially fabricated cabinet units.
- B. Countertops.
- C. Hardware.
- D. Factory finishing.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 099123 - Interior Painting: Field finishing of cabinet exterior.

**1.03 REFERENCE STANDARDS**

- A. AWI (QCP) - Quality Certification Program Current Edition.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards, U.S. Version 4.0 2021.
- D. BHMA A156.9 - American National Standard for Cabinet Hardware 2015.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
  - 1. Scale of Drawings: 1-1/2 inch to 1 foot, minimum.
  - 2. Provide information as required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- C. Product Data: Provide data for hardware accessories.
- D. Samples: Submit actual sample items of proposed pulls, hinges, shelf standards, and locksets, demonstrating hardware design, quality, and finish.

**1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
  - 1. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
- B. Quality Certification:
  - 1. Comply with AWI (QCP) woodworking association quality certification service/program in accordance with requirements for work specified in this section: [www.awiqcp.org/#sle](http://www.awiqcp.org/#sle).
  - 2. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
  - 3. Provide designated labels on shop drawings as required by certification program.
  - 4. Provide designated labels on installed products as required by certification program.
  - 5. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.
  - 6. Replace, repair, or rework all work for which certification is refused.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect units from moisture damage.

**1.07 FIELD CONDITIONS**

- A. During and after installation of custom cabinets, maintain temperature and humidity conditions in building spaces at same levels planned for occupancy.

## **PART 2 PRODUCTS**

### **2.01 CABINETS**

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.

### **2.02 WOOD-BASED COMPONENTS**

- A. Wood fabricated from old growth timber is not permitted.

### **2.03 LAMINATE MATERIALS**

- A. Manufacturers:
  1. Formica Corporation; [ ]: [www.formica.com/#sle](http://www.formica.com/#sle).
  2. Wilsonart LLC; [ ]: [www.wilsonart.com/#sle](http://www.wilsonart.com/#sle).

### **2.04 COUNTERTOPS**

- A. Solid Laminated Surfacing: Provide Custom quality hardwood; maple, plain sawn, exposed edge grain; laminated with waterproof adhesives; thickness as recommended by fabricator; suitable for transparent finish.
- B. Plastic Laminate Countertops: Medium density fiberboard substrate covered with HPDL, conventionally fabricated and self-edge banded.

### **2.05 ACCESSORIES**

### **2.06 HARDWARE**

- A. Hardware: BHMA A156.9, types as recommended by fabricator for quality grade specified.
- B. Metal Z-Shaped Wall Cabinet Support Clips: Paired, cleated, structural anchorage components applied to back of cabinets and walls for wall cabinet mounting.
- C. Adjustable Shelf Supports: Standard side-mounted system using recessed metal shelf standards or multiple holes for pin supports and coordinated self rests, polished chrome finish, for nominal 1 inch spacing adjustments.

### **2.07 FABRICATION**

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet from sink cut-outs.
- C. Mechanically fasten back splash to countertops as recommended by laminate manufacturer at 16 inches on center.
- D. Provide cutouts for plumbing fixtures. Verify locations of cutouts from on-site dimensions. Prime paint cut edges.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.
- B. Verify location and sizes of utility rough-in associated with work of this section.

### **3.02 INSTALLATION**

- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

### **3.03 ADJUSTING**

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

### **3.04 CLEANING**

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

**END OF SECTION**

**SECTION 072100  
THERMAL INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, underside of floor slabs, over roof deck, over roof sheathing, and exterior wall behind [ ] wall finish.
- B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
- C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Installation requirements for board insulation over steep slope roof sheathing or roof structure.
- B. Section 072600 - Vapor Retarders: Separate vapor retarder materials.
- C. Section 072700 - Air Barriers: Separate air barrier materials.

**1.03 REFERENCE STANDARDS**

- A. ASTM C240 - Standard Test Methods for Testing Cellular Glass Insulation Block 2021.
- B. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method 2017.
- C. ASTM C552 - Standard Specification for Cellular Glass Thermal Insulation 2021a.
- D. ASTM C553 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications 2013 (Reapproved 2019).
- E. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2019.
- F. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
- G. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2021.
- H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- I. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C 2019a.

**PART 2 PRODUCTS**

**2.01 APPLICATIONS**

- A. Insulation Under Concrete Slabs: Extruded polystyrene (XPS) board.
- B. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.
- C. Insulation on Inside of Framed Walls with Exposed Facer Providing Interior Finish: Glass-fiber-reinforced polyisocyanurate with exposed facers.
- D. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.
- E. Insulation in Wood Framed Walls: Batt insulation with separate vapor retarder.
- F. Insulation Over Roof Deck: Extruded polystyrene (XPS) board.

**2.02 FOAM BOARD INSULATION MATERIALS**

- A. Expanded Polystyrene (EPS) Board Insulation: Complies with ASTM C578.
  - 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
- B. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with either natural skin or cut cell surfaces.

1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
  2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
  3. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88), minimum, per 1 inch thickness at 75 degrees F mean temperature.
- C. Polyisocyanurate (ISO) Board Insulation: Rigid cellular foam, complying with ASTM C1289.
1. Classifications:
  2. Board Size: 48 inch by 96 inch.
  3. Board Thickness: 1.5 inch.
- D. Glass-Fiber-Reinforced Polyisocyanurate (ISO) Board Insulation with Facers Both Sides and Providing Interior Finish System: Rigid cellular foam, complying with ASTM C1289.
1. Compressive Strength: 16 psi, minimum.
  2. Thermal Resistance, R-value: Type I, Class 2, at 1-1/2 inch thick; 9.0, minimum, at 75 degrees F.
  3. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
  4. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
  5. Board Size: 48 inch by 96 inch.
  6. Board Thickness: 1 inch.
  7. Board Edges: Square.
  8. Exposed Facer: 4 mil, 0.004 inch embossed white thermoset-coated aluminum.
  9. Non-Exposed Facer: 1.25 mil, 0.00125 inch embossed aluminum.

### **2.03 BATT INSULATION MATERIALS**

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, 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. Facing: Aluminum foil, flame spread 25 rated; one side.
- C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
1. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.

### **2.04 ACCESSORIES**

- A. Sheet Vapor Retarder: See Section 072600.

## **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 BOARD INSTALLATION AT FOUNDATION PERIMETER**

- A. Install boards horizontally on foundation perimeter.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

### **3.03 BOARD INSTALLATION UNDER CONCRETE SLABS**

- A. Place insulation under slabs on grade after base for slab has been compacted.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

- C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

#### **3.04 BATT INSTALLATION**

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. At wood framing, place vapor retarder on warm side of insulation by stapling at 6 inches on center. Lap and seal sheet retarder joints over face of member.
- F. Tape seal tears or cuts in vapor retarder.
- G. Extend vapor retarder tightly to full perimeter of adjacent window and door frames and other items interrupting the plane of the membrane; tape seal in place.

#### **3.05 PROTECTION**

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

**END OF SECTION**



**SECTION 072600  
VAPOR RETARDERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Vapor retarders.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Vapor retarders on exterior wall sheathing.
- B. Section 072100 - Thermal Insulation: Vapor retarder installed in conjunction with batt insulation.
- C. Section 076200 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with vapor retarders.

**1.03 DEFINITIONS**

- A. Vapor Retarder: Airtight barrier made of material that is relatively water vapor impermeable, to degree specified, with seams and joints sealed to adjacent surfaces.
- B. Vapor Retarder Class: A measure of a material or assembly's ability to limit the amount of moisture that passes through that material or assembly. Vapor retarder class is defined using Procedure A, Desiccant Method at 73 degrees F and 50 percent Relative Humidity (RH), in accordance with ASTM E96/E96M and ICC (IBC)-2018, as follows:
  - 1. Class I: 0.1 perm or less.
  - 2. Class II: Greater than 0.1 perm to 1.0 perm.
  - 3. Class III: Greater than 1.0 perm to 10 perms.

**1.04 REFERENCE STANDARDS**

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
- B. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).
- C. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2020.
- D. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.
- E. ICC (IBC)-2018 - International Building Code 2018.
- F. ICC-ES AC148 - Acceptance Criteria for Flexible Flashing Materials 2017.

**PART 2 PRODUCTS**

**2.01 VAPOR RETARDER MATERIALS**

- A. Vapor Retarder Sheet: Butyl, black color.
  - 1. Thickness: 45 mil, 0.045 inch.
  - 2. Water Vapor Permeance: 0.1 perm, maximum, when tested in accordance with ASTM E96/E96M.
  - 3. Seam Lap and Perimeter Adhesive: Elastomeric, same composition as sheet or other compatible material.
- B. Vapor Retarder Sheet: ASTM D1970/D1970M.
  - 1. Type: Rubberized asphalt bonded to thermoplastic sheet, self-adhesive.
  - 2. Thickness: 40 mil, 0.040 inch, nominal.
  - 3. Sheet Width: 18 inches.
  - 4. Seam and Perimeter Tape: As recommended by sheet manufacturer.

**2.02 ACCESSORIES**

- A. Sealants, Tapes, and Accessories for Sealing Vapor Retarder and Adjacent Substrates: As indicated, complying with vapor retarder manufacturer's installation instructions.
- B. Sealant for Cracks and Joints in Substrates: Resilient elastomeric joint sealant compatible with substrates and vapor retarder materials.
  - 1. Application: Apply at 30 to 40 mil, 0.030 to 0.040 inch, nominal thickness.

2. Color: Green.
- C. Flexible Flashing: Self-adhering or mechanically-attached flashing used for wall penetrations in accordance with ICC-ES AC148 requirements.
- D. Sill Plate Sealer: Closed-cell foam tape with rubberized adhesive membrane; bridges gap between foundation structure and sill plate or skirt board.
  1. Width: 3-1/2 inches.
  2. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 30 days of weather exposure.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that surfaces and conditions comply with requirements of this section.

#### **3.02 PREPARATION**

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

#### **3.03 INSTALLATION**

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Vapor Retarders: Install continuous airtight barrier over surfaces indicated, with sealed seams and sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Self-Adhered Sheets:
  1. Prepare substrate in accordance with sheet manufacturer's installation instructions; fill and tape joints in substrate and between dissimilar materials.
  2. Lap sheets shingle fashion to shed water and seal laps airtight.
  3. Once sheets are in place, press firmly into substrate with resilient hand roller; ensure that laps are firmly adhered with no gaps or fishmouths.
  4. Use same material, or other material approved by sheet manufacturer, to seal sheets to adjacent substrates, and as flashing.
  5. At expansion joints, provide transition to joint assemblies approved by sheet manufacturer.

**END OF SECTION**

**SECTION 072700  
AIR BARRIERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Air barriers.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Air barrier under exterior cladding.
- B. Section 092116 - Gypsum Board Assemblies: Air barrier under exterior cladding.

**1.03 DEFINITIONS**

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

**1.04 REFERENCE STANDARDS**

- A. AATCC Test Method 127 - Test Method for Water Resistance: Hydrostatic Pressure 2018, with Editorial Revision (2019).
- B. ASTM C1338 - Standard Test Method for Determining Fungi Resistance of Insulation Materials and Facings 2019.
- C. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- E. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials 2016.
- F. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.

**1.05 QUALITY ASSURANCE**

- A. Air Barrier Association of America (ABAA) Evaluated Air Barrier Assemblies; [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle): Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

**PART 2 PRODUCTS**

**2.01 AIR BARRIER MATERIALS (AIR IMPERMEABLE AND WATER VAPOR PERMEABLE)**

- A. Air Barrier Sheet, Mechanically Fastened:
  - 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
  - 2. Water Vapor Permeance: 10 perms, minimum, when tested in accordance with ASTM E96/E96M using Procedure A - Desiccant Method, at 73.4 degrees F.
  - 3. Water Penetration Resistance: Withstand a water head of 21 inches, minimum, for at least 5 hours, when tested in accordance with AATCC Test Method 127.
  - 4. Ultraviolet (UV) and Weathering Resistance: Approved by manufacturer for up to 90 days of weather exposure.
  - 5. Surface Burning Characteristics: Flame spread index of 25 or less, and smoke developed index of 50 or less, Class A, when tested in accordance with ASTM E84.
  - 6. Seam and Perimeter Tape: Polyethylene self-adhering type, 2-1/2 inches wide, compatible with sheet material; unless otherwise indicated.
  - 7. Products:
    - a. Carlisle Coatings and Waterproofing, Inc; CCW 705 RS: [www.carlisleccw.com/#sle](http://www.carlisleccw.com/#sle).
    - b. DuPont de Nemours, Inc; Tyvek Construction Wrap with Tyvek Fluid Applied Flashing - Brush Formulation, Tyvek Fluid Applied Flashing and Joint Compound, FlexWrap, StraightFlash, VersaFlange, Tyvek Wrap Caps, and Tyvek Tape: [building.dupont.com/#sle](http://building.dupont.com/#sle).

- c. DuPont de Nemours, Inc; Tyvek CommercialWrap D with Tyvek Fluid Applied Flashing - Brush Formulation, Tyvek Fluid Applied Flashing and Joint Compound, FlexWrap NF, StraightFlash, StraightFlash VF, Tyvek Wrap Caps, and Tyvek Tape: [building.dupont.com/#sle](http://building.dupont.com/#sle).

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

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

#### **3.02 PREPARATION**

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

#### **3.03 INSTALLATION**

- A. Install materials in accordance with manufacturer's installation instructions.
- B. Air Barriers: Install continuous airtight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Apply sealants and adhesives within recommended temperature range in accordance with manufacturer's installation instructions.
- D. Mechanically Fastened Sheets - On Exterior:
  - 1. Install sheets shingle fashion to shed water, with seams generally horizontal.
  - 2. Overlap seams as recommended by manufacturer, 6 inches, minimum.
  - 3. Overlap at outside and inside corners as recommended by manufacturer, 12 inches, minimum.
  - 4. For applications indicated to be airtight, seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners as recommended by manufacturer.
  - 5. Install air barrier underneath jamb flashings.
  - 6. At framed openings with frames having nailing flanges, extend sheet into opening and over flanges; at head of opening, seal sheet over flange and flashing.
- E. Openings and Penetrations in Exterior Air Barriers:
  - 1. Install flashing over sills, covering entire sill frame member, extending at least 5 inches onto air barrier and at least 6 inches up jambs; mechanically fasten stretched edges.
  - 2. At openings with frames having nailing flanges, seal head and jamb flanges using a continuous bead of sealant compressed by flange and cover flanges with sealing tape at least 4 inches wide; do not seal sill flange.
  - 3. At openings with nonflanged frames, seal air barrier to each side of framing at opening using flashing at least 9 inches wide, and covering entire depth of framing.
  - 4. At head of openings, install flashing under air barrier extending at least 2 inches beyond face of jambs; seal air barrier to flashing.
  - 5. At interior face of openings, seal gap between window/door frame and rough framing, using joint sealant over backer rod.
  - 6. Service and Other Penetrations: Form flashing around penetrating item and seal to air barrier surface.

#### **3.04 PROTECTION**

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

**END OF SECTION**

**SECTION 074113  
METAL ROOF PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Architectural roofing system of preformed steel panels.
- B. Architectural roofing system of preformed aluminum panels.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Roof sheathing.
- B. Section 061500 - Wood Decking: Roof sheathing.
- C. Section 072100 - Thermal Insulation: Rigid roof insulation.
- D. Section 099113 - Exterior Painting: Field priming and painting roofing panels.

**1.03 REFERENCE STANDARDS**

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- B. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- C. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- D. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference 2005 (Reapproved 2017).

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Summary of test results, indicating compliance with specified requirements.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
  - 4. Specimen warranty.
- C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
  - 1. Show work to be field-fabricated or field-assembled.
- D. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.
- E. Test Reports: Indicate compliance of metal roofing system to specified requirements.
- F. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

**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. See Section 017419 - Construction Waste Management and Disposal for packaging waste requirements.

**1.07 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Finish Warranty: Provide manufacturer's special warranty covering failure of factory-applied exterior finish on metal roof panels and agreeing to repair or replace panels that show evidence of finish degradation, including significant fading, chalking, cracking, or peeling within specified warranty period of five years from Date of Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design:
  - 1. Architectural Metal Roof Panels: [ ] manufactured by [ ].
  - 2. Metal Soffit Panels: [ ] manufactured by [ ].
- B. Other Acceptable Manufacturers; Architectural Metal Roof Panels:
  - 1. Berridge Manufacturing Company; M-Panel: [www.berridge.com/#sle](http://www.berridge.com/#sle).
  - 2. Fabral; Stand N Seam: [www.fabral.com/#sle](http://www.fabral.com/#sle).
  - 3. Firestone Building Products; [ ]: [www.firestonebpc.com/#sle](http://www.firestonebpc.com/#sle).
  - 4. Metal Roofing Systems, Inc; System 1000 - Metal Roof Panels: [www.metalroofingsystems.biz/#sle](http://www.metalroofingsystems.biz/#sle).

### **2.02 PERFORMANCE REQUIREMENTS**

- A. Metal Roof Panels: Provide complete roofing assemblies, including roof panels, clips, fasteners, connectors, and miscellaneous accessories, tested for compliance with the following minimum standards:
  - 1. Structural Design Criteria: Provide panel assemblies designed to safely support design loads at support spacing indicated, with deflection not to exceed L/180 of span length(L) when tested in accordance with ASTM E1592.
  - 2. Overall: Complete weathertight system tested and approved in accordance with ASTM E1592.
  - 3. Thermal Movement: Design system to accommodate without deformation anticipated thermal movement over ambient temperature range of 100 degrees F.

### **2.03 ARCHITECTURAL METAL ROOF PANELS**

- A. Architectural Metal Roof Panels: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.
- B. Architectural Metal Panels: Factory-formed panels with factory-applied finish.
  - 1. Aluminum Panels:
    - a. Alloy and Temper: Aluminum complying with ASTM B209 (ASTM B209M); temper as required for forming.
    - b. Thickness: Minimum 20 gauge, 0.032 inch.
  - 2. Profile: Standing seam, with minimum 1.0 inch seam height; concealed fastener system for field seaming with special tool.
  - 3. Texture: Smooth.
  - 4. Width: Maximum panel coverage of 24 inches.

### **2.04 ATTACHMENT SYSTEM**

- A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

### **2.05 FINISHES**

- A. Fluoropolymer Coil Coating System: Manufacturer's standard multi-coat aluminum coil coating system complying with AAMA 2605, including at least 70 percent polyvinylidene fluoride (PVDF) resin, and at least 80 percent of coil coated aluminum surfaces having minimum total dry film thickness (DFT) of 0.9 mil, 0.0009 inch; color and gloss to match sample.

### **2.06 ACCESSORIES**

- A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Sealants:

1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
2. Concealed Sealant: Non-curing butyl sealant or tape sealant.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### **3.02 PREPARATION**

- A. Broom clean wood sheathing prior to installation of roofing system.
- B. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed roof will be free of leaks.
- C. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by roof panel manufacturer.
- D. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

#### **3.03 INSTALLATION**

- A. Overall: Install roofing system in accordance with approved shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.
  1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
  2. Minimize field cutting of panels. Where field cutting is absolutely required, use methods that will not distort panel profiles. Use of torches for field cutting is absolutely prohibited.
- B. Accessories: Install all components required for a complete roofing assembly, including flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, equipment curbs, rib closures, ridge closures, and similar roof accessory items.
- C. Roof Panels: Install panels in strict accordance with manufacturer's instructions, minimizing transverse joints except at junction with penetrations.

#### **3.04 PROTECTION**

- A. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- B. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

**END OF SECTION**

**SECTION 074213  
METAL WALL PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured metal panels for exterior wall panels, interior liner panels, soffit panels, and subgirt framing assembly, with insulation, related flashings, and accessory components.

**1.02 RELATED REQUIREMENTS**

- A. Section 061000 - Rough Carpentry: Wall panel substrate.
- B. Section 072100 - Thermal Insulation.
- C. Section 072500 - Weather Barriers: Water-resistive barrier under wall panels.
- D. Section 072700 - Air Barriers: Air barrier under wall panels.

**1.03 REFERENCE STANDARDS**

- A. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- B. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.

**1.04 SUBMITTALS**

- A. Product Data - Wall System: Manufacturer's data sheets on each product to be used, including:
  - 1. Physical characteristics of components shown on shop drawings.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation instructions and recommendations.
- B. Samples: Submit two samples of wall panel and soffit panel, 12 inches by 12 inches in size illustrating finish color, sheen, and texture.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Protect panels from accelerated weathering by removing or venting sheet plastic shipping wrap.
- B. Store prefinished material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.
- C. Prevent contact with materials that may cause discoloration or staining of products.

**1.06 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion for degradation of panel finish, including color fading caused by exposure to weather.
- C. Correct defective work within a five year period after Date of Substantial Completion, including defects in water tightness and integrity of seals for metal wall panels.

**PART 2 PRODUCTS**

**2.01 METAL WALL PANEL MATERIALS**

- A. Wall Panel System: Factory fabricated prefinished metal panel system, site assembled.
  - 1. Provide exterior wall panels, interior liner panels, soffit panels, and subgirt framing assembly.
  - 2. 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 wall.
  - 3. Maximum Allowable Deflection of Panel:  $L/180$  for length(L) of span.
  - 4. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when



subject to seasonal temperature cycling; dynamic loading and release of loads; and deflection of structural support framing.

5. Drainage: Provide positive drainage to exterior for moisture entering or condensation occurring within panel system.
  6. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
  7. Corners: Factory-fabricated in one continuous piece with minimum 2 inch returns.
- B. Exterior Wall Panels:
1. Profile: Vertical; style as indicated.
  2. Side Seams: Double-interlocked, tight-fitting, sealed with continuous gaskets.
  3. Panel Width: [ ] inches.
- C. Interior Liner Panels:
1. Profile: Vertical; style as indicated.
  2. Side Seams: Interlocking, sealed with continuous bead of sealant.
  3. Panel Width: [ ] inch.
- D. Soffit Panels:
1. Profile: Style as indicated, with venting provided.
- E. Subgirt Framing Assembly:
- F. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.
- G. Expansion Joints: Same material, thickness and finish as exterior sheets; [ ] gauge, [ ] inch thick; manufacturer's standard brake formed type, of profile to suit system.
- H. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- I. Anchors: Galvanized steel.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that building framing members are ready to receive panels.
- B. Verify that water-resistive barrier has been installed over substrate completely and correctly; see Section 072500.
- C. Verify that air barrier has been installed over substrate completely and correctly; see Section 072700.

#### **3.02 PREPARATION**

- A. Install subgirts perpendicular to panel length, securely fastened to substrates and shimmed and leveled to uniform plane. Space at intervals indicated.

#### **3.03 INSTALLATION**

- A. Install panels on walls and soffits in accordance with manufacturer's instructions.

#### **3.04 TOLERANCES**

- A. Maximum Offset From True Alignment Between Adjacent Members Butting or In Line: 1/16 inch.

#### **3.05 CLEANING**

- A. Remove site cuttings from finish surfaces.
- B. Remove protective material from wall panel surfaces.
- C. Clean and wash prefinished surfaces with mild soap and water; rinse with clean water.

**END OF SECTION**

**SECTION 077123  
MANUFACTURED GUTTERS AND DOWNSPOUTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Pre-finished aluminum gutters and downspouts.
- B. Precast concrete splash pads.

**1.02 RELATED REQUIREMENTS**

- A. Section 099113 - Exterior Painting: Field painting of metal surfaces.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2014 (2015 Errata).
- B. AAMA 2605 - Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- C. ASTM A48/A48M - Standard Specification for Gray Iron Castings 2003 (Reapproved 2021).
- D. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- E. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- F. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Comply with SMACNA (ASMM) for sizing components for rainfall intensity determined by a storm occurrence of 1 in 5 years.

**1.05 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate locations, configurations, jointing methods, fastening methods, locations, and installation details.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope to drain.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Pre-Finished Aluminum Sheet: ASTM B209 (ASTM B209M); 0.032 inch thick.
  - 1. Finish: Plain, shop pre-coated with modified silicone coating.
  - 2. Color: As selected from manufacturer's standard colors.

**2.02 COMPONENTS**

- A. Gutters: CDA rectangular style profile.
- B. Downspouts: CDA Rectangular profile.
- C. Anchors and Supports: Profiled to suit gutters and downspouts.
  - 1. Anchoring Devices: In accordance with CDA requirements.
  - 2. Gutter Supports: Brackets.
  - 3. Downspout Supports: Brackets.

**2.03 ACCESSORIES**

- A. Splash Pads: Precast concrete type, size and profiles indicated; minimum 3,000 psi at 28 days, with minimum 5 percent air entrainment.

**2.04 FABRICATION**

- A. Form gutters and downspouts of profiles and size indicated.
- B. Fabricate with required connection pieces.

- C. Form sections square, true, and accurate in size, in maximum possible lengths, free of distortion or defects detrimental to appearance or performance. Allow for expansion at joints.
- D. Hem exposed edges of metal.
- E. Fabricate gutter and downspout accessories; seal watertight.

## **2.05 FINISHES**

- A. Primer Coat: Finish concealed side of metal sheets with primer compatible with finish system, as recommended by finish system manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that surfaces are ready to receive work.

### **3.02 PREPARATION**

- A. Paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil, 0.015 inch.

### **3.03 INSTALLATION**

- A. Install gutters, downspouts, and accessories in accordance with manufacturer's instructions.
- B. Slope gutters [ ] inch per foot , [ ] percent minimum.

**END OF SECTION**

**SECTION 079200  
JOINT SEALANTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Nonsag gunnable joint sealants.
- B. Self-leveling pourable joint sealants.
- C. Joint backings and accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 072500 - Weather Barriers: Sealants required in conjunction with water-resistive barriers.
- B. Section 072600 - Vapor Retarders: Sealants required in conjunction with vapor retarders.
- C. Section 072700 - Air Barriers: Sealants required in conjunction with air barriers.
- D. Section 079100 - Preformed Joint Seals: Precompressed foam, gaskets, and strip seals.

**1.03 REFERENCE STANDARDS**

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015.
- B. ASTM C834 - Standard Specification for Latex Sealants 2017.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- E. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2018.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
  - 1. Bostik Inc; [\_\_\_\_]: [www.bostik-us.com/#sle](http://www.bostik-us.com/#sle).
  - 2. Dow; [\_\_\_\_]: [www.dow.com/#sle](http://www.dow.com/#sle).
  - 3. Pecora Corporation; [\_\_\_\_]: [www.pecora.com/#sle](http://www.pecora.com/#sle).
  - 4. Sherwin-Williams Company; [\_\_\_\_]: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
  - 5. Sika Corporation; [\_\_\_\_]: [www.usa.sika.com/#sle](http://www.usa.sika.com/#sle).
  - 6. Tremco Commercial Sealants & Waterproofing; [\_\_\_\_]: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
  - 7. W.R. Meadows, Inc; [\_\_\_\_]: [www.wrmeadows.com/#sle](http://www.wrmeadows.com/#sle).

**2.02 JOINT SEALANT APPLICATIONS**

- A. Scope:
  - 1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
    - a. Wall expansion and control joints.
    - b. Joints between door, window, and other frames and adjacent construction.
    - c. Joints between different exposed materials.
    - d. Openings below ledge angles in masonry.
    - e. Other joints indicated below.
  - 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
    - a. Joints between door, window, and other frames and adjacent construction.
    - b. Other joints indicated below.
  - 3. Do not seal the following types of joints.
    - a. Intentional weepholes in masonry.
    - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.

- c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
  - d. Joints where installation of sealant is specified in another section.
  - e. Joints between suspended panel ceilings/grid and walls.
- B. Type [ ] - Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.
  - C. Type [ ] - Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.

## 2.03 JOINT SEALANTS - GENERAL

### 2.04 NONSAG JOINT SEALANTS

- A. Type [ ] - Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus [ ] percent, minimum.
  - 2. Non-Staining to Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
  - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
- B. Type [ ] - Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus [ ] percent, minimum.

### 2.05 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
  - 1. Open Cell: 40 to 50 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.

## PART 3 EXECUTION

### 3.01 EXAMINATION

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

### 3.02 PREPARATION

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

### 3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance 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 080671  
DOOR HARDWARE SCHEDULE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

**1.02 RELATED REQUIREMENTS**

- A. Section 087100 - Door Hardware: Requirements to comply with in coordination with this section.

**1.03 REFERENCE STANDARDS**

- A. BHMA A156.5 - American National Standard for Cylinders and Input Devices for Locks 2014.
- B. BHMA A156.18 - American National Standard for Materials and Finishes 2016.
- C. DHI (H&S) - Sequence and Format for the Hardware Schedule 1996.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Only manufacturers listed in Door Hardware Schedule or Section 087100 are considered acceptable, unless noted otherwise.
- B. Obtain each type of door hardware as indicated from a single manufacturer and single supplier.
- C. Manufacturer's Abbreviations: Coordinate with manufacturers listed in Section 087100.

**2.02 DESCRIPTION**

- A. Door hardware sets provided represent the design intent, they are only a guideline and should not be considered a detailed or complete hardware schedule.
  - 1. Provide door hardware item(s) as required for similar purposes, even when item is not listed for a door in Door Hardware Schedule.
  - 2. Door hardware supplier is responsible for providing proper size and hand of door for products required in accordance with Door Hardware Schedule and as indicated on drawings.
  - 3. Quantities listed are for each Pair (PR) of doors, or for each Single (SGL) door, as indicated in hardware sets.

**2.03 FINISHES**

- A. Finishes: Complying with BHMA A156.18.
  - 1. Code 626: Satin chromium plated over nickel, with brass or bronze base material (former US equivalent US26D).

**PART 3 EXECUTION**

**3.01 DOOR HARDWARE SCHEDULE**

- A. Organize listing of door hardware components within each hardware set in compliance with 10-Part scheduling sequence indicated in DHI (H&S), unless otherwise indicated.

**3.02 HARDWARE SET # [ ]: "[ ]"**

- A. For use on Door Number(s): [ ].
- B. Provide for each Single (SGL) door(s).

UNITS	LOCK	ITEM	DESCRIPTION	FINISH	MFR

**END OF SECTION**

**SECTION 081113  
HOLLOW METAL DOORS AND FRAMES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Non-fire-rated hollow metal doors and frames.
- B. Fire-rated hollow metal doors and frames.
- C. Thermally insulated hollow metal doors with frames.

**1.02 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ANSI/SDI A250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finish Coatings for Steel Doors and Frames 2019.
- C. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2018.
- D. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.
- E. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- G. 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 2021.
- H. 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 2018a.
- I. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- J. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- K. ITS (DIR) - Directory of Listed Products current edition.
- L. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2007.
- M. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames 2014.
- N. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2019.
- O. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies 2017.
- P. SDI 117 - Manufacturing Tolerances for Standard Steel Doors and Frames 2013.
- Q. UL (DIR) - Online Certifications Directory Current Edition.
- R. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

**1.03 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Hollow Metal Doors and Frames:
  - 1. Ceco Door, an Assa Abloy Group company; [\_\_\_\_]: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  - 2. Curries, an Assa Abloy Group company; [\_\_\_\_]: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).

## 2.02 PERFORMANCE REQUIREMENTS

- A. Requirements for Hollow Metal Doors and Frames:
  - 1. 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.
  - 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
- B. 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 door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

## 2.03 HOLLOW METAL DOORS

- A. Door Finish: Factory primed and field finished.
- B. Type [ ], Exterior Doors: Thermally insulated.
  - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    - a. Level 1 - Standard-duty.
    - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
    - c. Model 1 - Full Flush.
    - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
  - 2. Door Core Material: Manufacturers standard core material/construction and in compliance with requirements.
    - a. Foam Plastic Insulation: Manufacturer's standard board insulation with maximum flame spread index (FSI) of 75, and maximum smoke developed index (SDI) of 450 in accordance with ASTM E84, and completely enclosed within interior of door.
  - 3. Door Thickness: 1-3/4 inches, nominal.
- C. Type [ ], Interior Doors, Non-Fire-Rated:
  - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    - a. Level 1 - Standard-duty.
    - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
    - c. Model 1 - Full Flush.
    - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
  - 2. Door Thickness: 1-3/4 inches, nominal.
- D. Type [ ], Fire-Rated Doors:
  - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    - a. Level 1 - Standard-duty.
    - b. Physical Performance Level C, 250,000 cycles; in accordance with ANSI/SDI A250.4.
    - c. Model 1 - Full Flush.
    - d. Door Face Metal Thickness: 20 gauge, 0.032 inch, minimum.
  - 2. Fire Rating: As indicated on Door Schedule, tested in accordance with UL 10C and NFPA 252 ("positive pressure fire tests").
  - 3. Provide units listed and labeled by UL (DIR) or ITS (DIR).
    - a. Attach fire rating label to each fire rated unit.
  - 4. Door Thickness: 1-3/4 inches, nominal.

## 2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. Exterior Door Frames: Knock-down type.
  - 1. Weatherstripping: Separate, see Section 087100.
- C. Interior Door Frames, Non-Fire Rated: Full profile/continuously welded type.
- D. Door Frames, Fire-Rated: Knock-down type.



1. Fire Rating: Same as door, labeled.

## **2.05 FINISHES**

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Factory Finish: Complying with ANSI/SDI A250.3, manufacturer's standard coating.
  1. Color: As selected by Architect from manufacturer's standard range.

## **2.06 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. Temporary Frame Spreaders: Provide for factory- or shop-assembled frames.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

### **3.02 INSTALLATION**

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Install door hardware as specified in Section 087100.
- E. Touch up damaged factory finishes.

### **3.03 TOLERANCES**

- A. Clearances Between Door and Frame: Comply with related requirements of specified frame standards or custom guidelines indicated in accordance with SDI 117 or NAAMM HMMA 861.
- B. Maximum Diagonal Distortion: 1/16 inch measured with straight edge, corner to corner.

### **3.04 ADJUSTING**

- A. Adjust for smooth and balanced door movement.

### **3.05 SCHEDULE**

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

**END OF SECTION**

**SECTION 085313  
VINYL WINDOWS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Vinyl-framed, factory-glazed windows.
- B. Operating hardware.

**1.02 RELATED REQUIREMENTS**

- A. Section 072500 - Weather Barriers: Sealing frames to water-resistive barrier installed on adjacent construction.

**1.03 REFERENCE STANDARDS**

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights 2017.
- B. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products 2012.
- C. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors 2002 (Reapproved 2018).
- D. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference 2015.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate opening dimensions, framed opening tolerances, affected related work, installation requirements, and [\_\_\_\_\_].
- C. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.

**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.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.
- B. Jig, brace, and box the window frame assemblies for transport to minimize flexing of members or joints.

**1.07 FIELD CONDITIONS**

- A. Maintain this minimum temperature during and after installation of sealants.

**1.08 WARRANTY**

- A. See Section 017800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a 5-year period after Date of Substantial Completion.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Vinyl Windows:

**2.02 DESCRIPTION**

- A. Vinyl Windows: Factory fabricated frame and sash members of extruded, hollow, ultra-violet-resistant, polyvinyl chloride (PVC) with integral color; with factory-installed glazing, hardware, related flashings, anchorage and attachment devices.
  - 1. Configuration: As indicated on drawings.
    - a. Product Type: AP - Awning projected window, C - Casement window, DW - Dual windows, FW - Fixed window, H - Hung window, vertically sliding, HS - Horizontal sliding window, and [\_\_\_\_\_] in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.

2. Color: Tan.
3. Size to fit openings with minimum clearance around perimeter of assembly providing necessary space for perimeter seals.
4. Framing Members: Fusion welded corners and joints, with internal reinforcement where required for structural rigidity; concealed fasteners.
5. System Internal Drainage: Drain to exterior side by means of weep drainage network any water entering joints, condensation within glazing channel, or other migrating moisture within system.
6. Glazing Stops, Trim, Flashings, and Accessory Pieces: Formed of rigid PVC, fitting tightly into frame assembly.

### **2.03 COMPONENTS**

- A. Glazing: Insulated double pane, annealed glass, clear, low-E coated, argon filled, with glass thicknesses as recommended by manufacturer for specified wind conditions and acoustic rating indicated.
- B. Frame Depth: 2-11/16 inches.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

### **3.02 INSTALLATION**

- A. Install window unit assemblies in accordance with manufacturers instructions and applicable building codes.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities as necessary.
- C. Align window plumb and level, free of warp or twist, and maintain dimensional tolerances and alignment with adjacent work.

### **3.03 TOLERANCES**

- A. Maximum Variation from Level or Plumb: 0.06 inches every 3 ft non-cumulative or 0.5 inches per 100 ft, whichever is less.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 014000 - Quality Requirements for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.
- B. Provide field testing of installed vinyl windows by independent laboratory in accordance with AAMA 502 and AAMA/WDMA/CSA 101/I.S.2/A440 during construction process and before installation of interior finishes.
  1. Field test for water penetration in accordance with ASTM E1105 using Procedure B - cyclic static air pressure difference; test pressure shall not be less than 1.9 psf.
  2. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 6.27 psf.
- C. Repair or replace fenestration components that have failed designated field testing, and retest to verify performance complies with specified requirements.

### **3.05 ADJUSTING**

- A. Adjust hardware for smooth operation and secure weathertight closure.

### **3.06 CLEANING**

- A. Remove protective material from pre-finished surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

**END OF SECTION**

**SECTION 090561  
COMMON WORK RESULTS FOR FLOORING PREPARATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
  - 1. Resilient tile and sheet.
- B. Preparation of new concrete floor slabs for installation of floor coverings.
- C. Preparation of new wood-based floors for installation of new floor coverings.

**1.02 RELATED REQUIREMENTS**

- A. Section 012200 - Unit Prices: Bid pricing for remediation treatments if required.
- B. Section 012300 - Alternates: Bid pricing for remediation treatments if required.
- C. Section 033000 - Cast-in-Place Concrete: Moisture emission reducing curing and sealing compound for slabs to receive adhered flooring, to prevent moisture content-related flooring failures; to remain in place, not to be removed.

**1.03 REFERENCE STANDARDS**

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens) 2021.
- B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2021.
- C. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2016a.
- D. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.

**1.04 ADMINISTRATIVE REQUIREMENTS**

**1.05 SUBMITTALS**

- A. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
  - 1. Moisture and alkalinity (pH) limits and test methods.
  - 2. Manufacturer's required bond/compatibility test procedure.
- B. Adhesive Bond and Compatibility Test Report.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.
- C. Keep materials from freezing.

**1.07 FIELD CONDITIONS**

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

**PART 2 PRODUCTS**

**PART 3 EXECUTION**

**3.01 CONCRETE SLAB PREPARATION**

- A. Perform following operations in the order indicated:
  - 1. Preliminary cleaning.
  - 2. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.

3. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
4. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
5. Specified remediation, if required.
6. Patching, smoothing, and leveling, as required.
7. Other preparation specified.
8. Adhesive bond and compatibility test.
9. Protection.

### **3.02 PRELIMINARY CLEANING**

- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

### **3.03 MOISTURE VAPOR EMISSION TESTING**

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

### **3.04 INTERNAL RELATIVE HUMIDITY TESTING**

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 Procedure A and as follows.
- D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
- F. Report: Report the information required by the test method.

### **3.05 PREPARATION**

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

### **3.06 ADHESIVE BOND AND COMPATIBILITY TESTING**

- A. Comply with requirements and recommendations of floor covering manufacturer.

**END OF SECTION**

**SECTION 092116  
GYPSUM BOARD ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Gypsum wallboard.
- D. Joint treatment and accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 054000 - Cold-Formed Metal Framing: Structural steel stud framing.
- B. Section 061000 - Rough Carpentry: Building framing and sheathing.
- C. Section 072100 - Thermal Insulation: Acoustic insulation.

**1.03 REFERENCE STANDARDS**

- A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members 2016, with Supplement (2018).
- B. ASTM A924/A924M - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process 2019.
- C. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017.
- D. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.
- E. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- F. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- G. GA-216 - Application and Finishing of Gypsum Panel Products 2018.

**PART 2 PRODUCTS**

**2.01 GYPSUM BOARD ASSEMBLIES**

- A. Provide completed assemblies complying with ASTM C840 and GA-216.

**2.02 METAL FRAMING MATERIALS**

- A. Manufacturers - Metal Framing, Connectors, and Accessories:
  - 1. ClarkDietrich; [\_\_\_\_]: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
- B. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
  - 1. Studs: C-shaped with knurled or embossed faces.
  - 2. Runners: U shaped, sized to match studs.

**2.03 BOARD MATERIALS**

- A. Manufacturers - Gypsum-Based Board:
  - 1. American Gypsum Company; [\_\_\_\_]: [www.americangypsum.com/#sle](http://www.americangypsum.com/#sle).
  - 2. CertainTeed Corporation; [\_\_\_\_]: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
  - 3. Georgia-Pacific Gypsum; [\_\_\_\_]: [www.gpgypsum.com/#sle](http://www.gpgypsum.com/#sle).
  - 4. USG Corporation; [\_\_\_\_]: [www.usg.com/#sle](http://www.usg.com/#sle).

**2.04 GYPSUM WALLBOARD ACCESSORIES**

**PART 3 EXECUTION**

**3.01 EXAMINATION**

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

**3.02 FRAMING INSTALLATION**

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Studs: Space studs at 16 inches on center.

1. Extend partition framing to structure where indicated and to ceiling in other locations.
  2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
- C. Openings: Reinforce openings as required for weight of doors or operable panels, using not less than double studs at jambs.
- D. Standard Wall Furring: Install at concrete walls scheduled to receive gypsum board, not more than 4 inches from floor and ceiling lines and abutting walls. Secure in place on alternate channel flanges at maximum 24 inches on center.

### **3.03 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. Exposed Gypsum Board in Interior Wet Areas: Seal joints, cut edges, and holes with water-resistant sealant.

### **3.04 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.

### **3.05 JOINT TREATMENT**

- A. 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.
- B. 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.

### **3.06 TOLERANCES**

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

**END OF SECTION**

**SECTION 095100  
ACOUSTICAL CEILINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

**1.02 RELATED REQUIREMENTS**

**1.03 REFERENCE STANDARDS**

- A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2017.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2013.
- C. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions 2020.

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.

**1.05 FIELD CONDITIONS**

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

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Acoustic Tiles/Panels:
  - 1. Armstrong World Industries, Inc; [ ]: [www.armstrongceilings.com/#sle](http://www.armstrongceilings.com/#sle).
  - 2. CertainTeed Corporation; [ ]: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
  - 3. USG Corporation; [ ]: [www.usg.com/ceilings/#sle](http://www.usg.com/ceilings/#sle).
- B. Suspension Systems:
  - 1. Same as for acoustical units.

**2.02 ACOUSTICAL UNITS**

**2.03 SUSPENSION SYSTEM(S)**

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that layout of hangers will not interfere with other work.

**3.02 PREPARATION**

- A. Install after major above-ceiling work is complete.

**3.03 INSTALLATION - SUSPENSION SYSTEM**

- A. Install suspension system in accordance with ASTM C636/C636M, ASTM E580/E580M, and manufacturer's instructions and as supplemented in this section.
- B. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- C. Locate system on room axis according to reflected plan.
- D. Suspension System, Non-Seismic: 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 or other 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.

#### **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. Fit border trim neatly against abutting surfaces.
- D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- E. Cutting Acoustical Units:
  - 1. Make field cut edges of same profile as factory edges.

#### **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: 2 degrees.

**END OF SECTION**

**SECTION 099123  
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.

**1.03 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
  - 1. Where sheen is specified, submit samples in only that sheen.
  - 2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens not required.

**1.04 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.

**1.05 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 ft candles 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. Sherwin-Williams Company: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).

## **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. Supply each paint material in quantity required to complete entire project's work from a single production run.
  - 3. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.

## **2.03 PAINT SYSTEMS - INTERIOR**

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Do not begin application of paints and finishes until substrates have been adequately prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- E. Test shop-applied primer for compatibility with subsequent cover materials.
- F. 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.

#### **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 mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Seal surfaces that might cause bleed through or staining of topcoat.
- E. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

#### **3.03 APPLICATION**

- A. Apply products in accordance with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual".
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- C. Apply each coat to uniform appearance in thicknesses specified by manufacturer.
- D. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- E. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

#### **3.04 CLEANING**

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

#### **3.05 PROTECTION**

- A. Protect finishes until completion of project.

**END OF SECTION**

**SECTION 102800  
TOILET, BATH, AND LAUNDRY ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Residential toilet, shower, and bath accessories.

**1.02 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service 2015a (Reapproved 2019).
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.

**1.03 SUBMITTALS**

- A. See Section 013000 - 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 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.
- B. Stainless Steel Tubing: ASTM A269/A269M, Grade TP304 or TP316.
- C. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

**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.
- D. See Section [ ] for installation of blocking, reinforcing plates, and concealed anchors in walls and ceilings.

**3.02 INSTALLATION**

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

**3.03 PROTECTION**

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

**END OF SECTION**

**SECTION 102819  
TUB AND SHOWER ENCLOSURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Tub and shower surrounds.

**1.02 RELATED REQUIREMENTS**

**1.03 REFERENCE STANDARDS**

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).

**1.04 SUBMITTALS**

- A. See Section 013000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's literature for enclosure.
- C. Shop Drawings: Indicate layout, dimensions, identification of components, and interface with adjacent construction.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until installation.

**PART 2 PRODUCTS**

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Do not begin installation until supports and adjacent substrates are complete.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

**3.02 PREPARATION**

- A. Clean substrates thoroughly prior to installation.
- B. Prepare substrates as recommended by the manufacturer.

**3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and approved shop drawings.
- B. Fit and align tub and shower enclosure level and plumb.

**3.04 FIELD QUALITY CONTROL**

- A. Verify enclosure does not leak while shower is running and door is fully closed and catch is engaged.

**3.05 ADJUSTING**

- A. Adjust tub and shower enclosure doors to operate smoothly.

**3.06 PROTECTION**

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

**END OF SECTION**

**SECTION 311000  
SITE CLEARING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Clearing and protection of vegetation.
- B. Removal of existing debris.

**1.02 RELATED REQUIREMENTS**

- A. Section 011000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 015000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 017000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.

**PART 2 PRODUCTS -- NOT USED**

**PART 3 EXECUTION**

**3.01 SITE CLEARING**

- A. Comply with other requirements specified in Section 017000.
- B. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

**3.02 VEGETATION**

- A. Do not remove or damage vegetation beyond the limits indicated on drawings.
- B. Install substantial, highly visible fences at least 3 feet high to prevent inadvertent damage to vegetation to remain:
  - 1. At vegetation removal limits.
- C. In areas where vegetation must be removed but no construction will occur other than pervious paving, remove vegetation with minimum disturbance of the subsoil.
- D. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.
  - 1. Chip, grind, crush, or shred vegetation for mulching, composting, or other purposes; preference should be given to on-site uses.
  - 2. Trees: Sell if marketable; if not, treat as specified for other vegetation removed; remove stumps and roots to depth of 18 inches.
  - 3. Sod: Re-use on site if possible; otherwise sell if marketable, and if not, treat as specified for other vegetation removed.
- E. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to Owner.

**3.03 DEBRIS**

- 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 329219  
SEEDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preparation of subsoil.
- B. Placing topsoil.
- C. Seeding, mulching and fertilizer.
- D. Maintenance.

**1.02 RELATED REQUIREMENTS**

- A. Section 312200 - Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.

**1.03 DEFINITIONS**

- A. Weeds: Include Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Bent Grass, Wild Garlic, Perennial Sorrel, and Brome Grass.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

**PART 2 PRODUCTS**

**2.01 REGULATORY REQUIREMENTS**

- A. Comply with regulatory agencies for fertilizer and herbicide composition.

**2.02 SEED MIXTURE**

- A. Seed Mixture:

**2.03 SOIL MATERIALS**

- A. Topsoil: Excavated from site and free of weeds.

**2.04 ACCESSORIES**

- A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Fertilizer: Recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated by analysis.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that prepared soil base is ready to receive the work of this Section.

**3.02 PREPARATION**

- A. Prepare subgrade in accordance with Section 312200.
- B. Place topsoil in accordance with Section 312200.

**3.03 FERTILIZING**

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

### **3.04 SEEDING**

- A. Apply seed at a rate of [ ] lbs per 1000 sq ft evenly in two intersecting directions. Rake in lightly.
- B. Do not seed areas in excess of that which can be mulched on same day.
- C. Do not sow immediately following rain, when ground is too dry, or during windy periods.
- D. Immediately following seeding and compacting, apply mulch to a thickness of 1/8 inches. Maintain clear of shrubs and trees.
- E. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.
- F. Following germination, immediately re-seed areas without germinated seeds that are larger than 4 by 4 inches.

### **3.05 PROTECTION**

- A. Cover seeded slopes where grade is 4 inches per foot or greater with erosion fabric. Roll fabric onto slopes without stretching or pulling.
- B. Lay fabric smoothly on surface, bury top end of each section in 6 inch deep excavated topsoil trench. Provide 12 inch overlap of adjacent rolls. Backfill trench and rake smooth, level with adjacent soil.

### **3.06 MAINTENANCE**

- A. Provide maintenance at no extra cost to Owner; Owner will pay for water.
- B. See Section 017000 - Execution Requirements, for additional requirements relating to maintenance service.
- C. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- D. Neatly trim edges and hand clip where necessary.
- E. Immediately remove clippings after mowing and trimming.
- F. Water to prevent grass and soil from drying out.
- G. Roll surface to remove minor depressions or irregularities.
- H. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- I. Immediately reseed areas that show bare spots.
- J. Protect seeded areas with warning signs during maintenance period.

**END OF SECTION**