

Project Manual for:  
City of Negaunee  
LaCombe Field Dugouts

Issued:  
February 6, 2024  
For Bids

Project Number:  
2346

Prepared By:



420 Rail Street  
Negaunee, MI 49866  
906-475-6616  
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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

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Not Used

**End of Section**

**Section 00 11 16  
Invitation to Bid**

Notice is given hereby that

**City of Negaunee**

will accept bids from qualified contractors for construction of:

**LaCombe Field Dugouts**

according to Drawings and Specifications prepared by:

Northern Design Works  
420 Rail Street  
Negaunee, MI 49866

Including, but not limited to: Construction of two dugout buildings on existing concrete slabs.

Sealed bids will be received at the office of the Negaunee City Clerk, 319 W. Case Street, until 11:00 AM local time, March 4, 2024. At that time, bids will be publicly opened. Bids received after the date and time specified may be returned to the bidder, unopened.

Bids will be taken on a lump sum basis as defined on the bid form. Bids shall be accompanied by bid security equal to 5% of the bid amount.

100% surety bonds for performance and payment of labor and materials are required.

Bid documents may be examined at the following locations:

Northern Design Works  
420 Rail Street  
Negaunee, MI 49866

Marquette Builders Exchange

Iron Mountain Builders Exchange

Builders Exchange of Northwest Michigan

Delta County Builders Exchange

Bid documents are available from the office of the architect, upon payment of \$40. Partial sets will not be issued. Electronic versions of the documents are available via e-mail at no cost.

Contractors are requested to notify the architect of their interest in the project, so they can be placed on the plan holders list.

The owner reserves the right to reject any or all bids and to waive irregularity in the bidding or the bidding process and accept the bid that is most advantageous to the owner.

Dated: February 6, 2024

by: City of Negaunee

**End of Section**

## **Section 00 21 00 Instructions to Bidders**

### **PART 1 - General**

#### 1.1 Summary

- A. Section includes:
  - 1. Bidder representations.
  - 2. Bid submission.
  - 3. Contract time.
  - 4. Bidding documents.
  - 5. Inquiries and addenda.
  - 6. Product substitutions.
  - 7. Site examination.
  - 8. Bidder qualifications.
  - 9. Subcontractors and suppliers.
  - 10. Submission procedure.
  - 11. Permits and Fees.
  - 12. Rejection of bids.
  - 13. Security deposit.
  - 14. Performance assurance.
  - 15. Acceptance of bid.
  - 16. Correction or withdrawal of bids.
  - 17. Form of agreement between owner and contractor.
- B. Related documents:
  - 1. Section 00 11 16 – Invitation to Bid.
  - 2. Section 00 41 00 – Bid Form.
  - 3. Section 00 73 00 – Supplementary Conditions.

#### 1.2 Bidder Representations

- A. By submitting a Bid, the Bidder represents that:
  - 1. The bidder has examined and understands the bidding documents.
  - 2. The Bid is made in compliance with the bidding documents.
  - 3. The bidder has examined the site in accordance with 'Site Examination' below.
  - 4. The bid is based on the materials, equipment, and systems required by the bidding documents without exception.
  - 5. The Bid is based solely on the information contained in the bidding documents, including addenda, and the bidder has not relied on any verbal statement from the Owner or Architect in the preparation of the Bid.

#### 1.3 Bid Submission

- A. Refer to Section 00 11 16 – Invitation to Bid for bid date, time, and location.
- B. Bids received after the date and time stated above may be returned to the bidder unopened.
- C. Amendments to submitted bids will be permitted when received in writing prior to bid closing and when endorsed by the same party or parties who signed and sealed the bid.

#### 1.4 Contract Time

- A. The Work is to be substantially complete by June 15, 2024.
- 1.5 Bidding Documents
- A. Refer to Section 00 11 16 – Invitation to Bid for information on document availability.
  - B. Bidding Documents are made available only for the purpose of obtaining bids on this Project. Their use does not grant a license for other purposes.
  - C. Bidders shall use complete sets of bidding documents in the preparation of their Bid. Neither the Owner nor the Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete sets of bidding documents.
- 1.6 Inquiries and Addenda
- A. Direct questions in writing to the office of the Architect.
  - B. Verbal answers are not binding on any party and bidders shall not rely on them.
  - C. Submit questions not less than four (4) days before bid date. Replies will be made by Addenda when required.
  - D. Addenda will be issued at least two (2) days before bid date, unless addenda include a revision in bid date. Addenda will be issued to all plan holders who have notified the Architect of their interest in bidding the project and to all plan rooms known to the Architect to have sets on file.
  - E. Costs for all addenda shall be included in the Bid.
  - F. Each bidder shall verify their receipt of all addenda before submitting a Bid and shall note receipt of addenda where indicated on bid form.
- 1.7 Product Substitutions
- A. The materials, products, and equipment described in the bid documents establish a standard or required function, dimension, appearance, and quality to be met by any proposed substitution.
  - B. Where bidding documents stipulate particular Products and substitutions are allowed, Bidders may submit requests for substitutions in writing no later than seven (7) days prior to bid date. With each substitution request provide enough information for Architect to determine acceptability of proposed products. Requests without sufficient information will be rejected without review.
  - C. Approved substitutions will be identified by addenda.
  - D. Claims by the bidder after the bid date for an addition to the Contract Time or Contract Sum because of changes in the Work necessitated by substitutions will not be considered.
- 1.8 Site Examination
- A. All contractors will be responsible for reviewing the existing site conditions prior to bidding. Each bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the work is to be performed and shall include in his bid a sum to cover the cost of items necessary to perform the work as set forth in the contract documents. No allowance will be made to a bidder because of lack of such examination. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.
  - B. The site is open for examination at any time.
- 1.9 Bidder Qualifications
- A. To demonstrate qualifications to perform the Work of this Project, Bidders may be requested to submit written evidence of financial position, previous experience, current commitments, licensure, and current and past legal disputes related to project

performance. All such information will be treated as confidential by the Architect and Owner and used for purposes of evaluating contractor qualifications only.

- 1.10 Subcontractors and Suppliers
  - A. Bidder shall state proposed sub-contractors where requested on the bid form. Failure to do so may be cause for rejection of a bid.
  - B. The Owner reserves the right to reject proposed sub-contractors or suppliers for reasonable cause.
  - C. Refer to AIA document A201-2017, article 5 of General Conditions.
- 1.11 Submission Procedure
  - A. Bidders are solely responsible for delivery of Bids in manner and time described.
  - B. Submit two copies of executed offer on Bid Form provided, signed by an authorized individual, with bid security as noted in Section 00 11 16 – Invitation to Bid, in a sealed envelope. Label the envelope with the bidder's name, project name, and 'sealed bid'.
  - C. Bids will not be accepted in facsimile, phone, electronically transmitted, or verbal format.
  - D. A bid summary will be available to bidders after bids are received and reviewed.
- 1.12 Permits and Fees
  - A. The Bid shall include all applicable fees and permit costs required by authorities having jurisdiction over the project unless noted otherwise in these specifications.
  - B. The Owner has previously acquired zoning approval and paid the required fees.
- 1.13 Rejection of Bids
  - A. Bids that do not meet the requirements stated above, are un-signed, or illegible may be rejected by the Owner.
- 1.14 Security Deposit
  - A. Refer to Section 00 11 16 – Invitation to Bid, for amount of bid security required.
  - B. Security may be in one of the following forms:
    - 1. Certified check in the name of the Owner.
    - 2. Bid bond on AIA document A310 – Bid Bond or surety standard form. Bond shall be endorsed in the name of the Owner as obligee, signed and sealed by principal (Contractor) and surety.
  - C. Security deposit of accepted bidder will be returned after execution of contract and submittal of any required bonds.
  - D. After a bid has been accepted, security deposit will be returned to other bidders.
- 1.15 Performance Assurance
  - A. The accepted bidder shall provide a performance and payment bond as described in 00 73 00 – Supplementary Conditions. The cost of such bond shall be included in the contract sum.
- 1.16 Acceptance of Bid
  - A. The Owner reserves the right to accept or reject any offer, with or without cause and to waive any informalities or irregularities in the bidding process.
  - B. If the lowest bid exceeds the project budget, the Owner reserves the right to negotiate scope changes, and contract sum adjustments, with the lowest bidder.
  - C. After acceptance of the bidder by the Owner, the Architect will issue, on behalf of the Owner, a letter of award. The bidder shall then cooperate with the Owner, with

technical and practical advice from the Architect, to prepare and execute a contract within the time stated on the bid form.

1.17 Correction or Withdrawal of Bid

- A. Bidders may withdraw their bids by written request at any time before bid closing. The written request shall not reveal the amount of the bid.
- B. After the bid closing, corrections may be made to bids where the error resulted from mathematical or clerical errors and the correct information is readily apparent from the information on the bid form.
- C. Bidders may be allowed to withdraw their bid after bid closing, without penalty, for serious mistakes of fact given that:
  - 1. The mistake is objectively provable.
  - 2. The mistake is large enough to present a material detriment to the bidder.
- D. Bidders will not be allowed to withdraw their bid after bid closing for mistakes of judgment. Bidders which do not execute a contract in such a situation will forfeit their bid security as damages to the Owner as stated on the bid form.

1.18 Form of agreement between Owner and Contractor

- A. The form of agreement shall be AIA document A101 – Standard Form of Agreement between Owner and Contractor where the basis of payment is a Stipulated Sum, 2017 edition.
- B. AIA document A201 – General Conditions of the Contract for Construction, 2017 edition, is included by reference herein.
  - 1. Refer to Section 00 73 00 – Supplementary Conditions for modifications to the General Conditions.
- C. Copies of these documents may be obtained from the office of the Architect.

**End of Section**



**Section 00 41 00  
Bid Form**

**PART 1 - General**

1.1 Project Information

- A. To: City of Negaunee, hereinafter called 'Owner'.
- B. Project: LaCombe Field Dugouts
- C. Date: March 4, 2024

1.2 Contractor Information

- A. Submitted by:

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(Hereinafter called 'Bidder')

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(Address)

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(Address)

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(Phone number and e-mail)

1.3 Bid

- A. Base Bid

Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by Northern Design Works for the above mentioned project, we, the undersigned, hereby offer to enter into a Contract to perform the Work for the Sum of:

(Dollars)

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(\$ \_\_\_\_\_) in lawful money of the United State of America

- B. Contract Time

If this bid is accepted, we will achieve Substantial Completion by June 15, 2024

- C. Bid Acceptance

This offer shall be open to acceptance and irrevocable for thirty (30) days from the Bid Date.

If the Owner accepts the Bid within the time stated above, we will:

1. Execute the Agreement within seven (7) days of receipt of Notice of Award.
2. [Furnish the required bonds, as described in Section 00 73 00 – Supplementary Conditions, within seven (7) days of receipt of Notice of Award.]
3. Commence work within seven (7) days of Notice to Proceed.

If this bid is accepted within the time stated, and we fail to commence the Work, the security deposit shall be forfeited as damages to the Owner by reason of our failure,

limited in amount to the lesser of the face value of the security deposit or the difference between this bid and the bid upon which a Contract is signed.

In the event our bid is not accepted within the time stated above, the required security deposit will 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.

D. Addenda  
The following addenda have been received. The modifications to the Bid Documents have been noted and all costs are included in the Bid Sum.

1. Addenda numbers \_\_\_\_\_

E. Sub-Contractors  
The following work will be performed by Sub-Contractors and coordinated by the Contractor. Failure to list sub-contractors at bid time may be a cause for rejection of the bid. (indicate portion of work and sub-contractor name, attach additional sheet if needed):

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F. Voluntary Alternates  
The Contract Sum proposed by the undersigned on the Bid Form is for the work as shown on the Drawings, described in the Specifications and otherwise defined in the Contract Documents. However, the undersigned proposes the following Voluntary Alternates for the Owner's consideration. Should the Owner accept any or all of the proposed substitutions, the bidders proposed Contract sum would be reduced by the amount shown (indicate specified product or material, proposed substitute, and reduction in Sum):

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G. Bid Form Signatures

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(Authorized Signature(s))

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(Printed name(s) and title(s))

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(Type of organization – Corporation, partnership, etc.)

Affix corporate seal, additional signatures required to give authority to bind corporation, or additional signatures for a joint venture or partnership as appropriate.

**End of Section**

## **Section 00 73 00 Supplementary Conditions**

### **PART 1 - General**

- 1.1 Summary
  - A. This document includes Supplementary Conditions to the General Conditions of the Contract for Construction.
- 1.2 Related Documents
  - A. Section 00 21 00 – Instructions to Bidders: Reference to Agreement and General Conditions.
- 1.3 Supplementary Conditions:
  - A. These Supplementary Conditions modify the General Conditions of the Contract for Construction, AIA Document A201-2017, and other provisions of the Contract Documents as indicated below. All provisions that are not so modified remain in full force and effect.
  - B. The terms used in these Supplementary Conditions that are defined in the General Conditions of the Contract for Construction, AIA Document A201-2017, have the meanings assigned to them in the General Conditions.

#### Article 1.1 Basic Definitions

Add the following:

##### 1.1.9 Miscellaneous Definitions

- A. The term 'product' includes materials, systems, and equipment.
- B. The term "provide" includes furnishing and installing a product, complete in place, tested and approved.
- C. The term "building code," and the term "code," refer to regulations of governmental agencies having jurisdiction.
- D. The terms "approved," "required," and "as directed" refer to and indicate the work or materials that may be approved, required, or directed by the Architect acting as the agent of the Owner.
- E. The term "similar" means in its general sense and not necessarily identical.
- F. The terms "shown," "indicated," "detailed," "noted," "scheduled," and terms of similar import, refer to requirements contained in the Contract Documents.

#### Article 3.10 Contractor's Construction Schedules

Add the following to 3.10.3:

In planning the construction schedule within the agreed contract time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to the site of the Work for the season or seasons of the year involved. The Architect will consider those weather delays attributable to abnormal weather conditions only.

Add the following to 3.10.3:

When the contract time has been extended, as provided under this Paragraph, such extension of time shall not be considered as justifying extra compensation to the Contractor for administrative or similar costs.

#### Article 3.14 Cutting and Patching

Add the following:

3.14.3 Each Subcontractor shall do all fitting of their own work as required to make its several components fit together or to receive the work of other Contractors. Holes cut in exterior walls or roofs for installation of mechanical or electrical equipment shall be waterproofed by the Contractor responsible for such installation.

#### Article 7 Changes in the Work

Add the following:

7.1.4 The Agreement identifies the overhead and profit fees applicable to Changes in the Work, whether additions to or deductions from the Work on which the Contract Sum is based and identifies the fees for subcontract work for changes (both additions and deductions) in the Work. The Contractor shall apply fees as noted, to the Subcontractor's gross (net plus fee) costs on additional work.

#### Article 9 Payments and Completion

Add the following to 9.3.1:

The form of application for payment shall be AIA Documents G702, "Application and Certificate for Payment," supported by continuation sheet or sheets G703 as approved by the Owner.

Add the following:

9.6.8 Retainage: Progress payments shall include that portion of the Contract Sum properly allocable to completed Work and stored materials, less Retainage of ten percent (10%).

#### Article 11 Insurance and Bonds

Add the following to 11.1.2:

Insurance coverage shall not be less than the following:

- A. Worker's Compensation: Statutory
- B. Contractor's Public Liability:
  - 1. Personal injury: \$500,000/\$1,000,000
  - 2. Property damage: \$500,000/\$1,000,000
- C. Contractor's Contingent Liability:
  - 1. Personal injury: \$500,000/\$1,000,000
  - 2. Property damage: \$500,000/\$1,000,000

- D. Automobile Public Liability:
1. Personal injury: \$500,000/\$1,000,000
  2. Property damage: \$500,000 each occurrence

Substitute the following for 11.4.1:

11.4.1 The Contractors shall furnish a Performance Bond in an amount equal to One Hundred Percent (100%) of the Contract and, also a Labor and Material Payment Bond in the amount of not less than One Hundred Percent (100%) of the Contract Sum or in a penal sum not less than that prescribed by State, Federal, Territorial, or Local Law, as security for payment of persons performing the Labor on the Project under this Contract and furnishing material in connection with this Contract. The Performance and Material Payment Bond may be in one or separate instruments and shall be delivered to the Owner not later than the date of execution of the Contract. Bonds shall be submitted on AIA document A312 or surety's standard form.

**End of Section**

## **Section 01 11 00 Summary of the Work**

### **PART 1 - General**

#### 1.1 The Work

- A. The project includes all material, labor, tools, equipment, field engineering, and transportation necessary to complete all work as identified in the Drawings and further defined in these Specifications. This includes all items not specifically mentioned, but incidental to the work to provide a complete and operational product.
- B. The Work includes:
  - 1. Construction of two dugout buildings on existing concrete slabs.
- C. The Owner may contract for other work concurrent with this contract.

**End of Section**

## **Section 01 20 00 Price and Payment Procedures**

### **PART 1 - General**

- 1.1 Section Includes
  - A. Schedule of Values
  - B. Applications for Payment
  - C. Requests for Information
  - D. Contract Modification Procedures
  - E. Defect Assessment
- 1.2 Schedule of Values
  - A. Submit printed schedule on AIA form G703 – Continuation Sheet for G702. Contractor’s standard form will be considered if similar to above.
  - B. Submit two copies of schedule of values to Architect within 15 days after date of Owner-Contractor Agreement.
  - C. Format: Identify each line item with title. Include mobilization and bonds and insurance as line items.
  - D. Include in each line item allowances specified in this section.
  - E. Revise schedule to include approved Change Orders with each Application for Payment.
- 1.3 Applications for Payment
  - A. Submit each application on AIA form G702 – Application and Certificate for Payment and G703 – Continuation Sheet for G702. Contractor forms in the same format are acceptable.
  - B. Content and Format: Utilize schedule of values for listing items in application for payment.
  - C. Payment Period: Submit at intervals as specified in the Agreement.
- 1.4 Requests for Information
  - A. Requests for Information (RFI) shall be used to:
    - 1. Request information and/or clarification related to the plans, specifications, or contract requirements.
    - 2. Request approval for minor deviations from contract requirements that do not involve any time or cost adjustment.
    - 3. Obtain directions on how to proceed when there are conflicting contract requirements.
  - B. RFI shall be submitted by the Contractor to the Architect on the Contractor’s standard RFI form. RFI’s shall be numbered sequentially and shall include:
    - 1. RFI number.
    - 2. Date.
    - 3. Identification of the construction deficiency or Contract document clarification requested.
    - 4. Reference to Specification and paragraph numbers, drawing numbers and drawing reference.
    - 5. Impact this clarification will have on schedule (number of days) and project costs (if any).



- C. If a change in the Contract Time and/or Contract Sum are required, a Change Order will be issued by the Architect for signatures of parties as provided for in the Conditions of the Contract.
- 1.5 Contract Modification Procedures
- A. The Architect will advise of minor changes in the Work, not involving adjustment to Contract Sum or Contract Time by issuing supplemental instructions.
  - B. The Architect may issue a Bulletin, including a detailed description of proposed change. The Contractor shall promptly prepare and submit a fixed price quotation for the proposed change, including any adjustment in the Contract Time. Provide full documentation to support price quotation.
  - C. Contractor may propose changes by submitting a request for change to the Architect, describing proposed change and its full effect on the Work. Include a statement describing reason for the change, and effect on Contract Sum and Contract Time with full documentation.
  - D. Stipulated Sum Change Order: Based on a Bulletin and the Contractor's price quotation, or Contractor's request for change.
    - 1. Change Orders will be prepared on the Architect's standard form.
    - 2. Architect will issue Change Orders for signatures of parties as provided for in the Conditions of the Contract.
  - E. Construction Change Directive: Architect may issue directive, on AIA form G713 – Construction Change Directive, signed by Owner, instructing Contractor to proceed with change in the Work. The change will subsequently be included in a Change Order. The document will describe changes in the Work, and designate a method for determining any change in Contract Sum or Contract Time. Promptly execute change.
  - F. Correlation of Contractor Submittals:
    - 1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum.
    - 2. Promptly revise project schedules to reflect change in Contract Time and resubmit.
    - 3. Promptly enter change in project record documents.
- 1.6 Defect Assessment
- A. Replace the Work, or portion of the Work, not conforming to specified requirements.
  - B. If, in the opinion of the Architect, it is not practical to remove and replace the non-conforming work, the Architect will direct appropriate remedy or adjust payment.
  - C. At the Owner's discretion, defective work may remain and an appropriate adjustment be made in payment.
  - D. Authority of Architect to assess defects and identify payment adjustments is final.
  - E. Non-Payment for Rejected Products: Payment will not be made for rejected products for any of the following:
    - 1. Products wasted or disposed of in a manner that is not acceptable.
    - 2. Products determined as un-acceptable before or after placement.
    - 3. Products placed beyond lines and levels of required Work.
    - 4. Products remaining on hand after completion of Work.
    - 5. Loading, hauling, and disposing of rejected products.

## **PART 2 - Products – Not Used**

**PART 3 - Execution – Not Used**

**End of Section**

## **Section 01 33 00 Submittal Procedures**

### **PART 1 - General**

#### 1.1 Summary

- A. Section includes samples, test reports, certificates, shop drawings and manufacturers' literature and data.
- B. Submit for approval, all of the items specifically mentioned under the separate sections of the specification, with information sufficient to evidence full compliance with contract requirements. Materials, fabricated articles and the like to be installed in permanent work shall equal those of approved submittals. After an item has been approved, no change in brand or make will be permitted unless:
  - 1. Satisfactory written evidence is presented to, and approved by the Architect, that manufacturer cannot make scheduled delivery of approved item or;
  - 2. Item delivered has been rejected and substitution of a suitable item is an urgent necessity or;
  - 3. Other conditions become apparent which indicates approval of such substitute item to be in best interest of the Owner.
- C. The Architect may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections.
- D. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.
- E. Forward submittals in sufficient time to permit proper consideration and approval action. Time submission to assure adequate lead time for procurement of contract required items. Delays attributable to untimely and rejected submittals will not serve as a basis for extending contract time for completion.

#### 1.2 Submittals

- A. Provide transmittal form with each submittal including:
  - 1. Contractor name
  - 2. Date of submittal
  - 3. Project title
  - 4. Section number of the specification section by which submittal is required.
  - 5. Description of submittal
  - 6. Submittal number
  - 7. When submittal is a re-submission, add alphabetic suffix on submittal number. For example, submittal 1 would become 1A to indicate re-submission.
- B. Provide submittals other than physical samples in electronic format submitted via e-mail to the Architect. Electronic submittals should include transmittal form as part of the submittal. Electronic files must be of sufficient quality that all information is legible. Electronic format shall be in PDF, unless otherwise specified or coordinated with the Architect.
- C. When submittals cannot be submitted in electronic format provide four copies.
- D. Samples should be submitted in the quantity specified in each specification requesting the samples.
- E. Submit two copies of Operations and Maintenance Data at completion of work for review and approval.

- 1.3 Quality Assurance
  - A. The contractor shall review all submittals before submission for compliance with the contract documents.
  - B. Submittals which have not been reviewed and certified as compliant with the project requirements by the Contractor will be rejected.
- 1.4 Scheduling
  - A. Schedule and submit concurrently submittals covering component items forming a system or items that are interrelated. Include certifications to be submitted with the pertinent drawings at the same time.
  - B. Coordinate scheduling, sequencing, preparing and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow for potential re-submittal.
  - C. Allow 10 business days for review of submittals in the construction schedule.

**PART 2 - Products - Not Used**

**PART 3 - Execution - Not Used**

**End of Section**

## Section 01 50 00 Temporary Facilities and Controls

### PART 1 - General

- 1.1 Section Includes
  - A. Temporary Utilities
    - 1. Temporary electricity.
    - 2. Temporary lighting for construction purposes.
    - 3. Temporary water service.
    - 4. Temporary sanitary facilities.
  - B. Construction Facilities
    - 1. Fire Extinguishers.
    - 2. Vehicular access and parking.
    - 3. Progress cleaning and waste removal.
    - 4. Project identification.
  - C. Temporary Controls
    - 1. Barriers.
    - 2. Dust control.
    - 3. Pollution control.
    - 4. Smoking.
    - 5. Removal of temporary utilities, facilities, and controls.
- 1.2 Temporary Electricity
  - A. Owner will pay cost of energy used. Exercise measures to conserve energy. Utilize Owner's existing power service.
  - B. Provide flexible power cords as required for portable tools and equipment.
  - C. Permanent convenience receptacles may be used during construction.
- 1.3 Temporary Lighting for Construction Purposes
  - A. Provide and maintain adequate lighting for construction operations.
  - B. Maintain lighting and provide routine repairs.
- 1.4 Temporary Water Service
  - A. Owner will pay for cost of temporary water. Exercise measures to conserve water. Utilize Owner's existing water system, extend and supplement with temporary devices as needed to maintain specified conditions for construction operations.
  - B. Provide temporary pipe insulation and heat tape as required to prevent freezing.
- 1.5 Temporary Sanitary Facilities
  - A. Provide and maintain required facilities in a sanitary condition. Use of existing facilities is not permitted. Provide facilities at time of project mobilization.
- 1.6 Fire Extinguishers
  - A. Provide at least one 4A:10B-C rated portable fire extinguisher at each floor which is under construction.
  - B. Provide an additional fire extinguisher at each area where flammable or combustible liquids are stored, used, and dispensed.
  - C. Provide fire extinguishers at each temporary office or storage shed on site.
- 1.7 Vehicular Access and Parking
  - A. Provide unimpeded access for emergency vehicles.

- B. Provide and maintain access to fire hydrants free of obstructions.
  - C. When site space is not adequate, provide additional off-site parking.
  - D. Use of existing on-site streets and driveways for construction vehicles is permitted. Tracked vehicles are not allowed on paved areas.
  - E. Use of existing parking facilities by construction personnel is permitted.
  - F. Do not allow heavy vehicles or construction equipment in parking areas.
- 1.8 Progress Cleaning and Waste Removal
- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
  - B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other enclosed or remote spaces prior to enclosing spaces.
  - C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
  - D. Collect and remove waste materials, debris, and rubbish from site weekly and dispose of off-site.
- 1.9 Project Identification
- A. No signs are permitted without Owner permission, except those required by law.
- 1.10 Barriers
- A. Provide protection for plants designated to remain. Replace damaged plants.
  - B. Protect non-owned vehicles, stored materials, site, and structures from damage.
- 1.11 Dust Control
- A. Execute Work by methods to minimize raising dust from construction operations.
  - B. Provide positive means to prevent dispersion of air-borne dust.
- 1.12 Pollution Control
- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
  - B. Comply with pollution and environmental control requirements of authorities having jurisdiction.
- 1.13 Smoking
- A. Smoking is not permitted in this facility.
- 1.14 Removal of Temporary Utilities, Facilities, and Controls
- A. Remove temporary utilities, equipment, facilities, and materials prior to final inspection.
  - B. Remove underground installations.
  - C. Clean and repair damage caused by temporary installations or use of temporary work.
  - D. Restore existing and new facilities used during construction to original or specified condition.

**PART 2 - Products – Not Used**

**PART 3 - Execution – Not Used**

**End of Section**

## Section 01 70 00 Execution and Closeout Requirements

### PART 1 - General

- 1.1 Summary
  - A. Section includes:
    - 1. Closeout procedures.
    - 2. Final cleaning.
    - 3. Protecting installed construction.
    - 4. Project record documents.
    - 5. Operation and maintenance data.
    - 6. Spare parts and maintenance products.
    - 7. Product warranties.
- 1.2 Closeout Procedures
  - A. Submit notification that Work is complete in accordance with Contract Documents and ready for Architect's review.
  - B. Provide submittals to Architect required by authorities having jurisdiction.
  - C. Upon completion of all punch list items, submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.
  - D. Include with final Application for Payment the Contractor's lien waiver, conditional on receipt of final payment.
- 1.3 Final Cleaning
  - A. Execute final cleaning prior to final project assessment.
  - B. Clean surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.
  - C. Clean equipment and fixtures to sanitary condition with cleaning materials appropriate to surface and material being cleaned.
  - D. Clean debris from roofs, gutters, downspouts, and drainage systems.
  - E. Clean site; sweep paved areas, rake clean landscaped surfaces.
  - F. Remove waste and surplus materials, rubbish, and construction facilities from site.
- 1.4 Protecting Installed Construction
  - A. Protect installed Work and provide special protection where specified in individual specification sections.
  - B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
  - C. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
  - D. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
  - E. Prohibit traffic or storage upon waterproofed or roofed surfaces. When traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
  - F. Prohibit traffic from landscaped areas.
- 1.5 Operation and Maintenance Data
  - A. Submit data bound in 8-1/2 x 11 inch (A4) text pages, binders with durable covers.

- B. Prepare binder cover with printed title "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of binder when multiple binders are required.
  - C. Internally subdivide binder contents with permanent page dividers, logically organized as described below; with tab titling clearly printed under reinforced laminated plastic tabs.
  - D. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
  - E. Contents: Prepare Table of Contents for each volume, with each product or system description identified, typed on white paper, in three parts as follows:
    - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.
    - 2. Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      - a. Significant design criteria.
      - b. Maintenance instructions for equipment and systems.
      - c. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
    - 3. Part 3: Project documents and certificates, including the following:
      - a. Shop drawings and product data.
      - b. Certificates.
      - c. Warranties.
- 1.6 Spare Parts and Maintenance Products
- A. Furnish spare parts, maintenance, and extra products in quantities specified in individual specification sections.
  - B. Deliver to Project site and place in location as directed by Owner.
- 1.7 Product Warranties
- A. Obtain warranties executed in duplicate by responsible subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.
  - B. Execute and assemble transferable warranty documents and bonds from subcontractors, suppliers, and manufacturers.
  - C. Verify documents are in proper form and contain full information.
  - D. Co-execute submittals when required.
  - E. Include Table of Contents and assemble in binder with durable cover.
  - F. Submit with final Application for Payment.

**PART 2 - Products**

2.1 Not Used

**PART 3 - Execution**

3.1 Not Used

**End of Section**



## **Section 04 05 00**

### **Masonry Mortar and Grout**

#### **PART 1 - General**

- 1.1 Summary
  - A. Section includes mortar and grout for masonry.
  - B. Related Sections:
    - 1. Section 04 20 00 – Unit Masonry.
- 1.2 References
  - A. ASTM C91 - Masonry Cement.
  - B. ASTM C94 - Ready-Mixed Concrete.
  - C. ASTM C144 - Aggregate for Masonry Mortar.
  - D. ASTM C150 - Portland Cement.
  - E. ASTM C199 - Test Method for Pier Test for Refractory Mortar.
  - F. ASTM C207 - Hydrated Lime for Masonry Purposes.
  - G. ASTM C270 - Mortar for Unit Masonry.
  - H. ASTM C387 - Packaged, Dry, Combined Materials for Mortar and Concrete.
  - I. ASTM C404 - Aggregates for Masonry Grout.
  - J. ASTM C476 - Grout for Masonry.
  - K. ASTM C595 - Blended Hydraulic Cements.
  - L. ASTM C1329 - Mortar Cement.
  - M. TMS (The Masonry Society) 402 / ACI (American Concrete Institute) 530 / ASCE (American Society of Civil Engineers) 5 - Building Code Requirements for Masonry Structures.
  - N. TMS (The Masonry Society) 602 / ACI (American Concrete Institute) 530.1 / ASCE (American Society of Civil Engineers) 6 - Specifications for Masonry Structures.
- 1.3 Quality Assurance
  - A. Perform Work in accordance with TMS 402 and TMS 602.
- 1.4 Environmental Requirements
  - A. Hot and Cold Weather Requirements: Comply with provisions of TMS 602.
  - B. Any heater burning fossil fuels shall have its exhaust vented to the outside of the enclosure.

#### **PART 2 - Products**

- 2.1 Components
  - A. Water: Clean and potable.
  - B. Mortar Aggregate: ASTM C144, standard masonry type.
  - C. Grout Aggregate: ASTM C404.
  - D. Hydrated Lime: ASTM C207.
  - E. Portland Cement: ASTM C150.
  - F. Blended Cement: ASTM C595.
  - G. Masonry Cement: ASTM C91.
  - H. Mortar Cement: ASTM C1329.
  - I. Premix Mortar: ASTM C387, Type S or N as indicated below.
  - J. Admixtures:
    - 1. Calcium Chloride admixtures are not allowed.

2. Use set retarding admixtures during hot weather only when approved.
3. Use accelerating admixtures in cold weather only when approved. Use of admixtures will not relax cold weather requirements.
4. Use of anti-freeze admixtures is not allowed.

## 2.2 Mixes

### A. Mortar Mixes:

1. Mortar for Exterior, Above Grade, Masonry: ASTM C270, Type N using Proportion Specification.

### B. Mortar Mixing:

1. Thoroughly mix mortar ingredients in accordance with ASTM C270 in quantities needed for immediate use.
2. Achieve uniformly damp sand immediately before mixing process.
3. Re-temper only within two hours of mixing.

### C. Grout Mixes:

1. Grout for Structural Masonry: 2,000 psi strength at 28 days; 8-11 inches slump; mixed in accordance with ASTM C476 Fine or Coarse grout.
2. Provide Fine or Coarse grout in accordance with TMS 602 grout space and pour height requirements.

### D. Grout Mixing:

1. Mix transit mixed grout in accordance with ASTM C94, modified to use ingredients complying with ASTM C476.
2. Thoroughly mix site mixed grout ingredients in quantities needed for immediate use in accordance with ASTM C476.

## **PART 3 - Execution**

### 3.1 Examination

- A. Request inspection of spaces to be grouted.

### 3.2 Preparation

- A. Plug clean-out holes to prevent leakage of grout materials.
- B. Brace masonry for wet grout pressure.
- C. Remove excess mortar from grout spaces.

### 3.3 Installation

- A. Install mortar and grout in accordance with TMS 602.
- B. Do not displace reinforcement while placing grout. Use rebar positioners to maintain the reinforcing in proper position.
- C. Mortar shall not be substituted for grout.

## **End of Section**

## Section 04 20 00 Unit Masonry

### PART 1 - General

- 1.1 Summary
  - A. Section includes masonry units, reinforcement, and accessories.
  - B. Related Sections:
    - 1. Section 04 05 00 – Masonry Mortar and Grout.
- 1.2 References
  - A. ACI 315 - Details and Detailing of Concrete Reinforcement.
  - B. ASTM A153/A153M - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - C. ASTM A666 - Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
  - D. ASTM B370 - Copper Sheet and Strip for Building Construction.
  - E. ASTM C90 - Load-Bearing Concrete Masonry Units.
  - F. ASTM C315 - Clay Flue Linings.
  - G. ASTM C744 - Pre-faced Concrete and Calcium Silicate Masonry Units.
  - H. ASTM D226 - Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
  - I. TMS (The Masonry Society) 402 / ACI (American Concrete Institute) 530 / ASCE (American Society of Civil Engineers) 5 - Building Code Requirements for Masonry Structures.
  - J. TMS (The Masonry Society) 602 / ACI (American Concrete Institute) 530.1/ASCE (American Society of Civil Engineers) 6 - Specifications for Masonry Structures.
- 1.3 Submittals
  - A. Product Data: Submit data for masonry units and accessories.
- 1.4 Quality Assurance
  - A. Perform Work in accordance with TMS 402 and TMS 602.
- 1.5 Environmental Requirements
  - A. Hot and Cold Weather Requirements: Comply with provisions of TMS 602.
  - B. Any heater burning fossil fuels shall have its exhaust vented to the outside of the enclosure.

### PART 2 - Products

- 2.1 Unit Masonry Products
  - A. Solid Load-Bearing Concrete Masonry Units (CMU): ASTM C90, Type II - Non-moisture Controlled; normal weight. Natural Gray color.
  - B. Decorative Concrete Masonry Units: ASTM C90, Type II - Non-moisture Controlled:
    - 1. Split face with vertical splits.
    - 2. Integral Tan color.
  - C. Concrete Masonry Unit Size and Shape: Nominal modular size of 8 inches x 16 inches x width indicated on plans. Furnish special units for 90 degree corners, bond beams, and lintels.
- 2.2 Accessories
  - A. Single Wythe Joint Reinforcement: Ladder type; steel wire, hot dip galvanized to ASTM A153/A153M Class B2 after fabrication, 9 gauge side rods with 9 gauge cross ties.

- B. Reinforcing Steel: ASTM A615/A615M, 60 ksi yield grade, deformed billet bars, uncoated finish.
- C. Mortar: As specified in Section 04 05 00.
- D. Grout: As specified in Section 04 05 00.
- E. Cleaning Solution: Non-acidic, soapless type not harmful to masonry work or adjacent materials.

### **PART 3 - Execution**

#### 3.1 Examination

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

#### 3.2 Preparation

- A. Direct and coordinate placement of metal anchors supplied to other Sections.
- B. Furnish temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent support.

#### 3.3 Installation

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form bed and head joints of uniform thickness.
- C. Coursing of Concrete Masonry Units:
  1. Bond: Running.
  2. Coursing: One unit and one mortar joint to equal 8 inches.
  3. Mortar Joints: Concave.
- D. Placing And Bonding:
  1. Lay solid masonry units in full bed of mortar, with full head joints.
  2. Lay hollow masonry units with face shell bedding on head and bed joints.
  3. Buttering corners of joints or excessive furrowing of mortar joints are not permitted.
  4. Remove excess mortar as Work progresses.
  5. Interlock intersections and external corners.
  6. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
  7. Perform job site cutting of masonry units with proper tools to assure straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- E. Joint Reinforcement:
  1. Install horizontal joint reinforcement 16 inches oc.
  2. Place masonry joint reinforcement in first horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
  3. Place joint reinforcement continuous in first joint below top of walls.
  4. Lap joint reinforcement ends minimum 6 inches.
  5. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- F. Grouted Components:
  1. Lap splices minimum 48 bar diameters.
  2. Support and secure reinforcing bars from displacement.
  3. Place and consolidate grout fill without displacing reinforcing.

4. At bearing locations, fill masonry cores with grout for minimum 12 inches either side of opening.
  5. Do not substitute mortar for grout.
- G. Reinforced Masonry:
1. Lay masonry units with cores vertically aligned and clear of mortar and unobstructed.
  2. Place reinforcing, reinforcement bars, and grout as indicated on Drawings.
  3. Splice reinforcement with minimum 48 bar diameter lap.
  4. Support and secure reinforcement from displacement.
  5. Place and consolidate grout fill without displacing reinforcing.
  6. Place grout in accordance with TMS 602.
- 3.4 Erection Tolerances
- A. Lay masonry units plumb, level and true to line within tolerances according to ACI 530.1/ASCE 6/TMS 602 and as follows:
1. Maximum variation from plumb:
    - a. In 10 feet - 1/4 inch.
    - b. In 20 feet - 3/8 inch.
    - c. In 40 feet or more - 1/2 inch.
  2. Maximum variation from level:
    - a. In any bay or up to 20 feet - 1/4 inch.
    - b. In 40 feet or more - 1/2 inch.
  3. Maximum variation from linear building lines:
    - a. In any bay or up to 20 feet - 1/2 inch.
    - b. In 40 feet or more - 3/4 inch.
  4. Maximum variation in cross sectional dimensions of columns and thickness of walls from dimensions shown:
    - a. Minus 1/4 inch.
    - b. Plus 1/2 inch.
  5. Maximum variation in prepared opening dimensions:
    - a. Accurate to minus 0 inch.
    - b. Plus 1/4 inch.
- 3.5 Cleaning
- A. Remove excess mortar and mortar smears as work progresses.
  - B. Replace defective mortar. Match adjacent work.
  - C. Clean soiled surfaces with cleaning solution.
  - D. Use non-metallic tools in cleaning operations.
- 3.6 Protection of Finished Work
- A. Without damaging completed work, provide protective boards at exposed external corners which may be damaged by construction activities.

### **End of Section**

## Section 06 10 00 Rough Carpentry

### PART 1 - General

- 1.1 Summary
  - A. Section specifies wood blocking, framing, sheathing, nailers, rough hardware, and light wood construction.
- 1.2 References
  - A. APA E30 - Design/Construction Guide - Residential and Commercial.
  - B. APA PRI-400 – Performance Standard for APA EWS I-Joists.
  - C. APA PS1 – Voluntary Product Standard for Construction and Industrial Plywood.
  - D. APA PS2 – Voluntary Product Standard for Performance Standards for Wood-Based Structural-Use Panels.
  - E. ASTM D1760 - Pressure Treatment of Timber Products.
  - F. ASTM D3498 - Adhesives for Field-Gluing Plywood to Lumber Framing for Floor Systems.
  - G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- 1.3 Delivery, Storage, and Handling
  - A. Protect lumber and other products from dampness both during and after delivery at site.
  - B. Pile lumber in stacks in such manner as to provide air circulation around surfaces of each piece.
  - C. Stack plywood and other board products to prevent warping.

### PART 2 - Products

- 2.1 Lumber Materials
  - A. Unless otherwise specified, each piece of lumber shall bear a grade mark, stamp, or other identifying marks indicating grades of material, and rules or standards under which produced.
  - B. Moisture Content: At time of delivery and maintained at the site.
    - 1. Boards and lumber 2 inches and less in thickness: 19 percent or less.
    - 2. Lumber over 2 inches thick: 25 percent or less.
  - C. Species and Grade:
    - 1. Species and grade shall be as indicated on drawings.
    - 2. Where not indicated on drawings, provide the following:
      - a. Studs: SPF(S), stud grade.
      - b. General Framing: SPF(S) #2 or better.
      - c. Laminated Veneer Lumber:
        - 1) Bending stress ( $F_b$ ): 2,600 psi or better.
        - 2) Modulus of Elasticity (E):  $1.8 \times 10^6$  or better.
  - D. Preservative Treatment:
    - 1. Treat wood members and plywood exposed to weather or in contact with earth, masonry or concrete, including sills, sole plates, furring, and sleepers that are less than 8 inches from ground; nailers, edge strips, blocking, crickets,

curbs, cant, vent strips and other members used in connection with roofing and flashing materials.

- a. Do not treat Heart Redwood and Western Red Cedar.
2. Treat other members specified as preservative treated (PT).
3. Preservative treat by the pressure method complying with ASTM D1760, except any process involving the use of Chromated Copper arsenate (CCA) for pressure treating wood is not permitted.

## 2.2 Plywood

- A. Comply with APA PS 1.
- B. Plywood shall bear the mark of a recognized association or independent inspection agency that maintains continuing control over quality of plywood which identifies compliance by veneer grade, group number, span rating where applicable, and glue type.
- C. Sheathing shall be APA rated Exposure 1 or Exterior; panel grade CD or better.

## 2.3 Structural Use Panels

- A. Comply with APA PS 2.
- B. Sheathing shall be APA Rated sheathing panels, durability classification of Exposure 1 or Exterior.

## 2.4 Accessories

- A. Fasteners: Hot dipped galvanized steel or stainless steel for high humidity and treated wood locations, unfinished steel elsewhere.
- B. Connectors: Provide fabricated steel connectors as shown on drawings.
  1. Use fasteners recommended by manufacturer for installation of connectors. All fasteners shall be hot dipped galvanized or stainless steel.
  2. Where in contract with preservative treated wood, connectors shall be hot dipped galvanized or stainless steel.

# **PART 3 - Execution**

## 3.1 Framing

- A. Set structural members level and plumb, in correct position.
- B. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.
- C. Place horizontal members, crown side up.
- D. Construct load bearing framing and curb members full length without splices.
- E. Bridge framing as detailed. Fit solid blocking at ends of members.

## 3.2 Sheathing

- A. Secure roof sheathing with longer edge (strength axis) perpendicular to framing members and with ends staggered and sheet ends over bearing.
- B. Use sheathing clips between sheets between roof framing members.
- C. Fully engage tongue and groove edges.

## **End of Section**

## **Section 07 31 13 Asphalt Shingles**

### **PART 1 - General**

#### 1.1 Summary

- A. Section includes granular surfaced asphalt shingle roofing, moisture shedding underlayment, and associated metal flashings.
- B. Related Sections:
  - 1. Section 06 10 00 – Rough Carpentry: Roof sheathing.

#### 1.2 References

- A. ASTM A653/A653M – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated by the Hot-Dip Process.
- B. ASTM B209/B209M – Aluminum and Aluminum-Alloy Sheet and Plate.
- C. ASTM B370 – Copper Sheet and Strip for Building Construction.
- D. ASTM D225 – Asphalt Shingles (Organic Felt) Surfaced with Mineral Granules.
- E. ASTM D226 – Asphalt Saturated Organic Felt Used in Roofing and Waterproofing.
- F. ASTM D228 – Testing Asphalt Roll Roofing, Cap Sheets and Shingles.
- G. ASTM D2178 – Asphalt Glass (Felt) Used in Roofing and Waterproofing.
- H. ASTM D3161 – Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).
- I. ASTM D3462 – Asphalt Shingles Made From Glass Felt and Surfaced with Mineral Granules.
- J. ASTM D4586 – Asphalt Roof Cement, Asbestos Free.
- K. ASTM D7158 - Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force / Uplift Resistance Method).
- L. ASTM E108 - Test Methods of Fire Tests for Roof Coverings.
- M. NRCA Roofing and Waterproofing Manual – Volume 2 – Steep Roofing Manual.
- N. UL790 – Tests for Fire Resistance of Roof Covering Materials.

#### 1.3 Submittals

- A. Product Data: Submit data including material characteristics, performance criteria, and limitations.
- B. Samples: Submit samples indicating each shingle color range and finish texture / pattern for color and texture selection.
- C. Warranty: Submit manufacturer's warranty for shingles specified.

#### 1.4 Quality Assurance

- A. Perform work in accordance with NRCA Steep Roofing Manual.

#### 1.5 Environmental Requirements

- A. Do not apply roofing materials during inclement weather without proper weather protection.
- B. Conform to all additional installation requirements specified by shingle manufacturer for cold weather installation.

#### 1.6 Warranty

- A. Furnish manufacturer's warranty for shingles.

### **PART 2 - Products**



- 2.1 Asphalt Shingles
  - A. Product Description: ASTM D 3018 Type I – Self-Sealing, UL Certification of ASTM D 3462, ASTM D 3161/UL997 110-mph Wind Resistance and UL Class A Fire Resistance, glass fiber mat base, ceramically colored/UV resistant mineral surface granules across entire face of shingle; algae-resistance; two piece laminate shingle.
  - B. 229 pounds per 100 square feet weight.
  - C. Self-sealing type; laminated overlay; color to be selected from submittal.
- 2.2 Components
  - A. Underlayment: ASTM D226, synthetic polymer-based scrim reinforced underlayment designed for use on roof decks as a water-resistant layer beneath asphalt shingles.
- 2.3 Accessories
  - A. Nails: Standard round wire shingle type, hot dipped zinc coated steel, of sufficient length to penetrate through roof sheathing.
  - B. Plastic Cement: ASTM D4586, Asphalt type with mineral fiber components, capable of setting within 24 hours at 75° F and 50 percent RH.
  - C. Flashing Materials:
    - 1. Sheet Flashings: ASTM A653/A653M, G90 (Z275); 26 gauge thick steel pre-coated with vinyl finish in dark brown color or ASTM B209/B209M, 0.03 inch thick aluminum, pre-coated with vinyl in dark brown color.
  - D. Bituminous Paint: Acid and alkali resistant type, black color.
- 2.4 Fabrication
  - A. Form flashings to profiles indicated on drawings and to protect roofing materials from physical damage and shed water.
  - B. Form flashing sections square and accurate to profile, in maximum possible lengths, and free from distortion or defects.
  - C. Hem exposed edges of flashings to minimum ¼ inch on underside.
  - D. Apply bituminous paint to concealed surfaces of flashings in contact with other metals.

### **PART 3 - Execution**

- 3.1 Examination
  - A. Verify deck surfaces are dry and free of ridges, warps, and voids.
- 3.2 Preparation
  - A. Broom clean deck surface.
- 3.3 Installation
  - A. Underlayment Installation
    - 1. Apply one layer of underlayment. Lap sides and ends 4" minimum. Install rake drip edge over underlayment.
    - 2. Offset joints from course to course six feet minimum.
  - B. Metal Flashing and Accessories Installation
    - 1. Weather lap joints 2 inch minimum and seal weather tight with butyl or polyisobutylene sealant.
    - 2. Secure in place with concealed fastenings.
  - C. Asphalt Shingles Installation
    - 1. Place shingles in straight coursing pattern, with five inch weather exposure.
    - 2. Project first course of shingle ¾" past face of fascia.

3. Extend shingles on both slopes across valley in weave pattern and fasten. Extend shingles minimum of 12 inches beyond valley centerline to achieve woven valley, concealing valley protection.
4. Complete work to provide weather tight installation.

3.4 Protection of Installed Construction

- A. Do not permit traffic over finished roof surface.

**End of Section**

## **Section 07 46 43 Composition Siding**

### **PART 1 - General**

- 1.1 Summary
  - A. Section includes:
    - 1. Engineered wood siding and accessories.
  - B. Related Sections:
    - 1. Section 06 10 00 - Rough Carpentry: wood stud support framing.
- 1.2 References
  - A. APA PRP-108 - Performance Standards and Qualification Policy for Wood Structural Panels.
  - B. APA PS2 – Performance Standard for Wood Structural Panels.
  - C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  - D. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials.
  - E. UL 723 - Test for Surface Burning Characteristics of Building Materials.
- 1.3 Coordination
  - A. Coordinate engineered wood siding installation with flashings, trim, and construction of other adjoining work to ensure proper sequencing, construction progress, and to provide a leakproof, secure, and noncorrosive installation.
- 1.4 Submittals
  - A. Product Data: For each type of product and component included in engineered wood siding system. Include the following:
    - 1. Construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of product and accessory included in siding system.
  - B. Samples for Verification: For each type, color, texture, and pattern required.
    - 1. 6-inch long sample of engineered wood siding and trim.
  - C. Closeout Submittals
    - 1. Maintenance Data: For each type of product, including related accessories, to include in maintenance manuals.
- 1.5 Quality Assurance
  - A. Installer Qualifications: Installers trained by siding manufacturer.
- 1.6 Delivery, Storage, And Handling
  - A. Deliver components and other manufactured items so as not to be damaged or deformed. Package components for protection during transportation and handling with manufacturer's name and identification of products.
  - B. Unload, store, and erect components in a manner to prevent bending, warping, twisting, and surface damage. Maintain slip sheet until piece is being prepared for installation.
  - C. Store components on flat surfaces clear of the ground. Store under roof or covered with suitable weathertight and ventilated covering, and in accordance with manufacturers' written instructions.

## **PART 2 - PRODUCTS**

- 2.1 Source Limitations
  - A. Provide components and materials specified in this Section from a single manufacturer for a complete and compatible assembly.
- 2.2 Performance Requirements
  - A. Structural Performance: Provide engineered wood siding system tested to APA PS2 and PRP 108, in compliance with IBC Section 2308.9.3, Table 2308.9.3(5), and certified to be without permanent deformation or failure of structural members in accordance with design wind velocities for Project geographic location and probability of occurrence based on data from wind velocity maps provided in ASCE 7 and as approved by authorities having jurisdiction (AHJ).
  - B. Fire-Resistance Performance: Comply with ASTM E119 for testing by a qualified testing agency. Identify products with appropriate markings from an applicable testing agency acceptable to AHJ.
    - 1. Surface-Burning Characteristics: Provide engineered wood siding system with a Class C flame-spread index of 76 to 200 or less and a smoke-developed index of 0 to 450 or less when tested in accordance with ASTM E84 and UL 723.
  - C. Thermal Movement Performance: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects.
- 2.3 Engineered Wood Siding
  - A. Treated Engineered Wood Trim: Provide manufacturer's standard trim, fascia board, angles, and similar components at corners, transitions, and rough openings meeting the performance requirements.
    - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Louisiana-Pacific Corporation; LP SmartSide Trim or equal.
    - 2. Thickness: 0.675 inch total thickness.
    - 3. Width: As noted on drawings.
    - 4. Length: 16 ft.
    - 5. Edges: Square.
    - 6. Color: As selected by Architect from manufacturer's full range.
    - 7. Texture: Smooth finish.
- 2.4 Accessories
  - A. Fasteners: Hot-dipped galvanized nails, with 0.092-inch diameter shank, in length required to penetrate wood structural panels and structural framing a minimum of 1-1/2 inches, as recommended in writing by composite siding system manufacturer suitable for and compatible with system materials. Larger diameter fasteners may be required depending on wind pressure, wind speed, and wind exposure category limitations for structures in product approvals PR-N124 or ESR-1301.
  - B. Sealant: ASTM C920, minimum Class 25 sealant.

## **PART 3 - Execution**

- 3.1 Examination

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, engineered wood siding system supports, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 Installation

- A. General: Install engineered wood siding in accordance with manufacturer's written instructions in orientation, sizes, and locations indicated. Anchor engineered wood siding and other components of the Work securely in place.
  - 1. Shim or otherwise plumb substrates receiving engineered wood siding system.
  - 2. Flash engineered wood siding at perimeter of all openings.
  - 3. Locate and space fastenings in uniform vertical and horizontal alignment.
  - 4. Seal engineered wood substrates exposed to weather to prevent moisture intrusion and water buildup.
    - a. Seal around penetrations.
    - b. Seal each exposed cut of siding and trim. Do not field spray-apply coatings on cuts.
    - c. Seal each butt joint from weather by covering with joint moldings, sealant, or factory prefinished ends.
  - 5. Install flashing and trim as engineered wood siding work proceeds.
  - 6. Align bottoms of engineered wood siding.
- B. Metal Protection: Where dissimilar metal flashings contact each other or corrosive substrates, protect against galvanic action as recommended in writing by siding manufacturer.
- C. Accessory Installation: Install accessories with positive anchorage to building and weathertight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.
- D. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, and set units true to line and level. Install work with laps, joints, and seams that are permanently watertight.
  - 1. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to achieve waterproof performance.
- E. Replace engineered wood siding components that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

### **End of Section**