

PROJECT MANUAL

FOR



**DORCHESTER SCHOOL DISTRICT 2
164 MCQUEEN BLVD.
SUMMERVILLE, SC29483**

**BEECH HILL ES SECTIONS 1 AND 3 ROOF REPLACEMENT
1001 BEECH HILL RD
SUMMERVILLE, SOUTH CAROLINA 29420
REI PROJECT NO. R25CHS-031**

10-10-2025

PREPARED BY:



**4995 LACROSS RD., SUITE 1325, NORTH CHARLESTON, SC 29406
SOUTH CAROLINA COA 1906**

SECTION 00 01 07

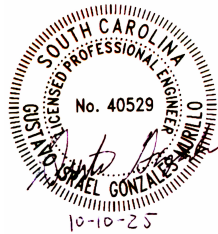
SEALS PAGE

PART 1 GENERAL

1.1 SUMMARY

- A. Design Firm for Beech Hill ES Sections 1 and 3 Roof Replacement with Project Manual dated 10-10-2025:
1. REI Engineers, Inc., 4995 Lacross Rd., Suite 1325, North Charleston, SC 29406.
 2. South Carolina Certificate of Authorization 1906

Professional Engineer



Registered Roof Consultant



South Carolina Certificate of Authorization



END OF SECTION 00 01 07

SECTION 00 01 10

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PART 1 GENERAL

1.1 SUMMARY

- A. The following drawings dated 10-10-2025 are included as part of the Contract Documents:
1. G-001 Cover
 2. XR101 Demo Roof Plan Section 1
 3. XR102 Demo Roof Plan Sections
 4. XR103 Wind Uplift Plan
 5. XR301 Roof Systems
 6. XR501 Details
 7. XR502 Details
 8. XR503 Details
 9. XR504 Details
 10. XR505 Details

END OF SECTION 00 01 15

AIA® Document A701® – 2018

Instructions to Bidders

for the following Project:
(Name, location, and detailed description)

Beech Hill ES Sections 1 and 3 Roof Replacement
1001 Beech Hill Road, Summerville, SC 29420

THE OWNER:

(Name, legal status, address, and other information)

Dorchester School District Two
815 South Main Street, Summerville, SC 29483

THE ARCHITECT:

(Name, legal status, address, and other information)

REI Engineers, Inc
4995 Lacross Road, Suite 1325, North Charleston, SC 29406

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- 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS**

ADDITIONS AND DELETIONS:

The author of this document may have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- .1 the Bidder has read and understands the Bidding Documents;
- .2 the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- .3 the Bid complies with the Bidding Documents;
- .4 the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- .5 the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- .6 the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

Bidding documents may be obtained at the following website:

<https://www.ddtwo.org/district/departments/finance/solicitations-and-awards>

§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper

Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids. *(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)*

Requests for clarification or interpretation to be submitted by email to ggonzales@reiengineers.com

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

Addenda will be posted on the following website:

<https://www.ddtwo.org/district/departments/finance/solicitations-and-awards>

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Edits to entries made on paper bid forms must be initialed by the signer of the Bid.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

A bid bond or certified check of not less than five percent (5%) of the base bid.

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety

shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:

(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

Paper copy on bid form provided.

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:

(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 Owner's Financial Capability

A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

- .1 a designation of the Work to be performed with the Bidder's own forces;
- .2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and
- .3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.

(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds

§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)
- .4 Building Information Modeling Exhibit, if completed:
- .5 Drawings

Number	Title	Date
G-001	Cover Drawing Index	10-10-25

- .6 Specifications

Section	Title	Date	Pages
Section 00 01 10	Table of Contents	10-10-25	216

- .7 Addenda:

Number	Date	Pages
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.8 Other Exhibits:
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

☐ AIA Document E204™–2017, Sustainable Projects Exhibit, dated as indicated below:
(Insert the date of the E204-2017.)

☐ The Sustainability Plan:

Title	Date	Pages
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☒ Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Section 00 73 00	Supplementary Conditions		7

.9 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

Additions and Deletions Report for

AIA® Document A701® – 2018

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 08:31:16 EDT on 10/08/2025.

Changes to original AIA text

PAGE 1

Beech Hill ES Sections 1 and 3 Roof Replacement

1001 Beech Hill Road, Summerville, SC 29420

Dorchester School District Two

815 South Main Street, Summerville, SC 29483

REI Engineers, Inc

4995 Lacross Road, Suite 1325, North Charleston, SC 29406

PAGE 2

Bidding documents may be obtained at the following website:

<https://www.ddtwo.org/district/departments/finance/solicitations-and-awards>

PAGE 3

Requests for clarification or interpretation to be submitted by email to ggonzales@reiengineers.com

PAGE 4

Addenda will be posted on the following website:

A bid bond or certified check of not less than five percent (5%) of the base bid.

PAGE 5

Paper copy on bid form provided.

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Number <u>G-001</u>	Title <u>Cover Drawing Index</u>	Date <u>10-10-25</u>	
Section <u>Section 00 01 10</u>	Title <u>Table of Contents</u>	Date <u>10-10-25</u>	Pages <u>216</u>
Document <u>Section 00 73 00</u>	Title <u>Supplementary Conditions</u>	Date	Pages <u>7</u>

Variable Information

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[X] Supplementary and other Conditions of the Contract:

Document <u>Section 00 73 00</u>	Title <u>Supplementary Conditions</u>	Date	Pages <u>7</u>
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SECTION 00 31 26.23

EXISTING ASBESTOS INFORMATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Testing for the presence of asbestos containing materials has been conducted. Results of the testing are for information and bidding purposes only. Contractor is responsible for verification of field conditions affecting performance of this work and for determining the extent or presence of asbestos containing materials.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 ENCLOSURES

- A. The attached Asbestos Sampling Test Results are provided.



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 412506926

Customer ID: REIC42

Customer PO:

Project ID:

Attention: William Biletzskov

REI Engineers

4995 Lacross Road

Suite 1325

North Charleston, SC 29406-6508

Project: 25CHS-031-Beech Hill ES Sector 1

Phone: (843) 225-6272

Fax:

Received Date: 07/07/2025 9:40 AM

Analysis Date: 07/11/2025 - 07/18/2025

Collected Date:

Test Report: Asbestos Analysis of Bulk Materials via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy

Sample	Description	Appearance	<u>Non-Asbestos</u>		<u>Asbestos</u>
			% Fibrous	% Non-Fibrous	% Type
1 412506926-0001	TC No. 1 (Sector 1) - Base Plies	Black Fibrous Homogeneous	4% Cellulose 5% Glass	<1% Ca Carbonate 91% Non-fibrous (Other)	None Detected
2 412506926-0002	TC No. 2 (Sector 1) - Base Plies	Black Fibrous Homogeneous	<1% Cellulose 30% Glass	70% Non-fibrous (Other)	None Detected
4 412506926-0003	TC No. 1 (Sector 1) - Base Flashing Ply	Black Fibrous Homogeneous	3% Cellulose 5% Glass	<1% Ca Carbonate 92% Non-fibrous (Other)	None Detected
5 412506926-0004	TC No. 2 (Sector 1) - Base Flashing Ply	Black Fibrous Homogeneous	3% Cellulose 10% Glass	5% Ca Carbonate 82% Non-fibrous (Other)	None Detected
7-Silver Paint 412506926-0005	TC No. 1 (Sector 1) - Surface Flashing Ply	Silver Fibrous Homogeneous	2% Cellulose	5% Ca Carbonate 93% Non-fibrous (Other)	None Detected
7-Flashing 412506926-0005A	TC No. 1 (Sector 1) - Surface Flashing Ply	Black Fibrous Homogeneous	2% Cellulose 5% Glass	20% Quartz 10% Ca Carbonate 63% Non-fibrous (Other)	None Detected
8-Silver Paint 412506926-0006	TC No. 2 (Sector 1) - Surface Flashing Ply	Silver Non-Fibrous Homogeneous		5% Ca Carbonate 95% Non-fibrous (Other)	None Detected
8-Flashing 412506926-0006A	TC No. 2 (Sector 1) - Surface Flashing Ply	Black Fibrous Homogeneous	3% Cellulose 5% Glass	2% Quartz 10% Ca Carbonate 80% Non-fibrous (Other)	None Detected

Analyst(s)

Ashley Hill (4)

Zachary Park (4)

Lee Plumley, Laboratory Manager
or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC NVLAP Lab Code 200841-0, VA 3333 00312

Initial report from: 07/18/2025 15:03:32



EMSL Analytical, Inc.

10801 Southern Loop Blvd Pineville, NC 28134

Tel/Fax: (704) 525-2205 / (704) 525-2382

<http://www.EMSL.com> / charlottelab@emsl.com

EMSL Order: 412506926

Customer ID: REIC42

Customer PO:

Project ID:

Attention: William Biletzskov
REI Engineers
4995 Lacross Road
Suite 1325
North Charleston, SC 29406-6508

Project: 25CHS-031-Beech Hill ES Sector 1

Phone: (843) 225-6272

Fax:

Received Date: 07/07/2025 9:40 AM

Analysis Date: 07/23/2025

Collected Date:

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by TEM via EPA/600/R-93/116 Section 2.5.5.1

Sample ID	Description	Appearance	% Matrix Material	% Non-Asbestos Fibers	Asbestos Types
3 412506926-0007	TC No. 3 (Sector 1) - Base Plies	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
6 412506926-0008	TC No. 3 (Sector 1) - Base Flashing Ply	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
9-Silver Paint 412506926-0009	TC No. 3 (Sector 1) - Surface Flashing Ply	Silver Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected
9-Flashing 412506926-0010	TC No. 3 (Sector 1) - Surface Flashing Ply	Black Non-Fibrous Homogeneous	100.0 Other	None	No Asbestos Detected

Analyst(s)

Sarah Breneman (4)

Lee Plumley, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. EMSL recommends that samples reported as none detected or <1% undergo additional analysis via PLM to avoid the possibility of false negatives.

Samples analyzed by EMSL Analytical, Inc. Pineville, NC

Initial report from: 07/23/2025 15:08:34

SECTION 00 41 13

BID FORM

PART 1 GENERAL

1.1 PROJECT AND ITS PARTIES

- A. TO:
- Owner Representative
Dorchester School District 2
164 McQueen Blvd.,
Summerville, SC 29483
- B. PROJECT:
1. Beech Hill ES Sections 1 and 3 Roof Replacement
 2. REI Project No. R25CHS-031 / DD2 IFB #2425-01X
- C. FROM:
1. Date: _____
 2. Bidder: _____
 3. Address: _____
 4. Phone: _____ Email: _____
 5. GC License #: _____ Classification: _____ Limitation: _____

1.2 BASE BID

- A. The undersigned, as bidder, hereby declares that the only person or persons interested in this bid as principal or principals is or are named herein and that no other person than herein mentioned has any interest in this bid or in the contract to be entered into; that this proposal is made without connection with any other person, company or parties making a bid or proposal; and that it is in all respects fair and in good faith without collusion or fraud. The Bidder further declares that he has examined the site of the work and the contract documents relative thereto dated 10-10-2025 as prepared by REI Engineers, Inc., and has read all special provisions furnished prior to the opening of bids; that he has satisfied himself relative to the work to be performed. The Bidder proposes and agrees if this bid is accepted to contract with the Owner in the form of contract specified, to furnish all necessary materials, equipment, machinery, tools apparatus, means of transportation and labor necessary to complete the construction of the project with a definite understanding that no money will be allowed for extra work except as set forth in the General Conditions and the Contract Documents, for the sum of:
1. Words: _____
 2. Figures: \$ _____.

1.3 ALTERNATES:

- A. The undersigned agrees to perform alternative work as described in Section 01 23 00 - Alternates for the sums stated below resulting in additions to or deductions from the base bid stated above. Additions and deductions shall include any modifications of the Work or additional work that may be reasonably included as part of the alternative work. All alternative work is to be completed within the same timeframe as the base bid work. All alternates must be filled out. A zero or no entry after any alternate indicates no cost change to include that Alternate. Alternates may be accepted at any time during the bid holding period. The undersigned acknowledges that failure to complete all information requested in this section may result in the rejection of this bid.

1. Alternate No. 1: Roof Area 3- Remove existing metal roof system down to the existing steel deck. Secure steel deck to structural framing members. Provide insulation system, self-adhering underlayment and new standing seam metal roof with flashings, accessories and gutter system as specified to provide a 20-year warrantable roof system.

a. Words: _____

b. Figures: \$ _____.

c. Select One: ___ Add or ___ Deduct

1.4 ALLOWANCES:

- A. Include in the Base Bid the following Quantity Allowances:

1. Repair 500 SF of Corroded Steel Deck (Corrosion Degree 1) with Coating.
2. Repair 50 SF of Steel Deck (Corrosion Degree 2) with Steel Plates.
3. Overlay 50 SF of Deteriorated Steel Deck (Corrosion Degree 3) with Steel Deck.
4. Replace 50 SF of Deteriorated Steel Deck (Corrosion Degree 4).
5. Replace 200 BF of Deteriorated Wood Blocking.

1.5 UNIT PRICES:

- A. Unit prices quoted and accepted shall apply throughout the life of the contract, except as otherwise specifically noted. Unit prices shall be applied, as appropriate, to compute the total value of changes in the scope of the work all in accordance with the contract documents.

1. Repair Corroded Steel Deck with Coating: \$ _____ per SF.
2. Repair Steel Deck with Steel Plates: \$ _____ per SF.
3. Overlay Deteriorated Steel Deck with Steel Deck: \$ _____ per SF
4. Replace Deteriorated Steel Deck: \$ _____ per SF
5. Replace Deteriorated Wood Blocking: \$ _____ per BF

1.6 MANUFACTURERS:

- A. Base bid shall utilize roofing materials manufactured by _____. Only one manufacturer shall be listed. Provide Section 00 62 33 - Roof Manufacturer's Acknowledgment signed by manufacturer listed above and enclose with bid.

1.7 BID HOLDING TIME AND ACCEPTANCE:

- A. No bid may be withdrawn after receipt of Bids for a period of 60 days.

1.8 SCHEDULE OF COMPLETION:

- A. The undersigned understands that time is of the essence and agrees to the Contract Time and liquidated damages as indicated in General Conditions of the Contract for Construction and Supplementary Conditions apply to this Work. The undersigned hereby agrees to commence work on this project within 30 days following receipt of an Executed Agreement between the Owner and Contractor. Date of commencement will be established in a Notice to Proceed issued to Contractor. Complete work under the Base Bid and all alternates accepted within 90 calendar days from the date of commencement.

1. Applicable liquidated damages shall be as stated in the Supplementary Conditions.

1.9 ADDENDUM:

- A. Addendum received and used in computing bid:

1. Addendum No. 1: _____
2. Addendum No. 2: _____

1.10 SUBCONTRACTORS:

- A. Fill out all blanks on the list below listing all subcontractors. Identify work by the general, subcontractor or not applicable for each trade; utilize blank lines to list trades not provided. Do not list suppliers. All blanks must be filled in. Failure to do so may result in bid being declared non-responsive. If there is more than one subcontractor per trade identified below, list all. If no subcontractors are to be utilized, indicate by signing at the appropriate place at the bottom of the table.

1. Trade: Roofing Contractor: _____
2. Trade: _____ Contractor: _____
3. Trade: _____ Contractor: _____
4. Trade: _____ Contractor: _____
5. We do not plan to use subcontractors: _____ (Signed)

1.11 ENCLOSURES:

- A. Provide the following enclosures with submitted bid:

1. Bid Bond
2. Roof Manufacturer's Acknowledgment for Manufacturer listed above.

1.12 SUBMITTED BY:

- A. Contractor Name: _____
- B. Authorized Signing Officer Name: _____
- C. Authorized Signing Office Title: _____
- D. Signature: _____
- E. Respectfully submitted this _____ day of _____, 20____

1.13 NOTARIZED BY:

- A. I, _____ (print name), a Notary Public for
_____ County of _____ (State),
do hereby certify that _____ (officer listed above)
personally appeared before me this day and acknowledged the due execution of the
foregoing instrument. Witness my hand and official seal, this _____ day of
_____, 20 _____. My commission expires _____ of _____, 20 ____.
- B. Signed: _____

(OFFICIAL SEAL)

END OF SECTION 00 41 13

SECTION 00 52 13

STANDARD FORM OF AGREEMENT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. AIA Document A101 - 2017 Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

DRAFT AIA® Document A101™ – 2017

Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum

AGREEMENT made as of the «**■**» day of «**■**» in the year «**■**»
(In words, indicate day, month and year.)

BETWEEN the Owner:
(Name, legal status, address and other information)

« **»**« **»**
« **»**
« **»**
« **»**

and the Contractor:
(Name, legal status, address and other information)

« **»**« **»**
« **»**
« **»**
« **»**

for the following Project:
(Name, location and detailed description)

« **»**
« **»**
« **»**

The Architect:
(Name, legal status, address and other information)

«REI Engineers, Inc.
4995 Lacross Road
Suite 1325
North Charleston, South Carolina 29406»

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

The parties should complete A101™-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201™-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

ELECTRONIC COPYING of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 THE WORK OF THIS CONTRACT
- 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
- 4 CONTRACT SUM
- 5 PAYMENTS
- 6 DISPUTE RESOLUTION
- 7 TERMINATION OR SUSPENSION
- 8 MISCELLANEOUS PROVISIONS
- 9 ENUMERATION OF CONTRACT DOCUMENTS

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than a Modification, appears in Article 9.

ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of the commencement of the Work shall be fixed in a notice to proceed issued by the Owner.

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work.

§ 3.3 Substantial Completion

§ 3.3.1 The Contractor shall achieve Substantial Completion of the entire Work not later than « Ninety » (« 90») calendar days from the date of commencement subject to adjustments of this Contract Time as provided in the Contract Documents and as follows:

Portion of Work

n/a

Substantial Completion Date

n/a

(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

§ 3.3.3 If the Contractor has not substantially completed the work within the specified contract time period and no time extension is granted, the contract amount shall be reduced by the sum of one thousand (\$1,000) dollars per day for each day in excess of the scheduled date of completion. Deductions from the original contract amount will be documented in the form of a Change Order. Should the Owner or Architect delay the starting time or any portion of the work, an equitable adjustment will be made in the schedule.

If the Contractor has not completed the punch list items within fifteen (15) days of the substantial completion inspection, the Owner will have the right to impose liquidated damages in the amount of three hundred (\$300) dollars for each consecutive day until all of the items are completed.

If the Contractor has not submitted the required closeout documents within thirty (30) calendar days after Substantial Completion of the Work, the Owner will have the right to impose liquidated damages in the amount of three hundred (\$300) dollars for each consecutive day until all of the items are completed.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be « » (\$ « »), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

§ 4.2.1 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and are hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 4.3 Allowances, if any, included in the Contract Sum:
(Identify each allowance.)

Item	Price
« »	

§ 4.4 Unit prices, if any:

(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00)
« »		

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month.

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the last day of a month, the Owner shall make payment of the amount certified to the Contractor not later than Forty-Five (45) days after the Architect receives the Application for Payment.
(Federal, state or local laws may require payment within a certain period of time.)

§ 5.1.4 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.6 Subject to other provisions of the Contract documents the amount of each progress payment shall be computed as follows:

- .1 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the Contract Sum allocated to that portion of the Work in the schedule of values, less retainage of « Three and One Half » percent (« 3.5 » %). Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute shall be included as provided in Section 7.3.9 of AIA Document A201™-2007, General Conditions of the Contract for Construction;
- .2 Add that portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing), less retainage of « Three and One Half » percent (« 3.5 » %);
- .3 Subtract the aggregate of previous payments made by the Owner; and
- .4 Subtract amounts, if any, for which the Architect has withheld or nullified a Certificate for Payment as provided in Section 9.5 of AIA Document A201-2007.

§ 5.1.7 The progress payment amount determined in accordance with Section 5.1.6 shall be further modified under the following circumstances:

- .1 Add, upon Substantial Completion of the Work, a sum sufficient to increase the total payments to the full amount of the Contract Sum, less such amounts as the Architect shall determine for incomplete Work, retainage applicable to such work and unsettled claims; and
(Section 9.8.5 of AIA Document A201-2007 requires release of applicable retainage upon Substantial Completion of Work with consent of surety, if any.)
- .2 Add, if final completion of the Work is thereafter materially delayed through no fault of the Contractor, any additional amounts payable in accordance with Section 9.10.3 of AIA Document A201-2007.

§ 5.1.8 Reduction or limitation of retainage, if any, shall be as follows:

(If it is intended, prior to Substantial Completion of the entire Work, to reduce or limit the retainage resulting from the percentages inserted in Sections 5.1.6.1 and 5.1.6.2 above, and this is not explained elsewhere in the Contract Documents, insert here provisions for such reduction or limitation.)

« None »

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

§ 5.2 Final Payment

§ 5.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201-2007, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 45 days after the issuance of the Architect's final Certificate for Payment.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201-2007.

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201-2007, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[☒] Arbitration pursuant to Section 15.4 of AIA Document A201-2007

[☐] Litigation in a court of competent jurisdiction

[☐] Other *(Specify)*

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201-2007.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201-2007.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201-2007 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

(Name, address, email address, and other information)

<< >>
<< >>
<< >>

§ 8.3 The Contractor's representative:

(Name, address, email address, and other information)

<< >>
<< >>
<< >>

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in Article 11 of AIA Document A201™-2007.

<< >>

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

- .1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor.
- .2 AIA Document A201™-2007, General Conditions of the Contract for Construction.
- .3 Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
<< 1 >>	Supplementary Conditions		6

- .4 Specifications
Refer to Section 00 01 10 – Table of Contents contained in REI Project Manual entitled “ “ dated xxxxx, xx, 2018”
- .5 Drawings
Refer to Section 00 01 15 - List of Drawings contained in REI Project Manual entitled “ “ dated xxxxx, xx, 2018”.
- .6 Addenda, if any:

Number

« »

Date

Pages

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

This Agreement entered into as of the day and year first written above.

« »

OWNER *(Signature)*

« »« »

(Printed name and title)

« »

CONTRACTOR *(Signature)*

« »« »

(Printed name and title)

SECTION 00 60 00

PROJECT FORMS

PART 1 GENERAL

1.1 SUMMARY

- A. The following documents are hereby incorporated into the Contract Documents by reference:
1. AIA Documents: Properly licensed forms are available for purchase from the American Institute of Architects at www.aia.org/documents. Utilize current version of each document.
 - a. G702 Application and Certificate for Payment
 - b. G703 Continuation Sheet
 - c. G706 Contractor's Affidavit of Payment of Debts and Claims
 - d. G706A Contractor's Affidavit of Payment of Release of Liens
 - e. G707 Consent of Surety to Final Payment
- B. The following documents are included in the Project Manual:
1. Section 00 61 13.13 - Performance Bond Form
 2. Section 00 61 13.16 - Payment Bond Form
 3. Section 00 62 33 - Roof Manufacturer's Acknowledgment
 4. Section 00 62 73 - Schedule of Values
 5. Section 00 63 13 - Request for Interpretation
 6. Section 00 63 25 - Substitution Request Form
 7. Section 00 63 55 - Change Proposal Form
 8. Section 00 65 36 - Contractor's Warranty
 9. Section 00 65 37 - Asbestos Free Warranty

END OF SECTION 00 60 00

SECTION 00 61 13.13

PERFORMANCE BOND FORM

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Utilize AIA Document A312 - 2010 Performance Bond. Document is incorporated by reference, Contractor is responsible to obtain a properly licensed form for use on the project.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 GENERAL

- A. A Performance Bond in the amount of the contract is required.
- B. Include the cost of providing bonds in the Base Bid.
- C. Deliver the required bonds to the Owner no later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section.
- D. Write bonds on the forms contained or referenced herein.
- E. Write bond in the amount of the Contract Sum.
- F. Date bonds on the date of the Contract.
- G. Issue bonds by sureties and execute by an attorney-in-fact, on behalf of the surety, who is authorized to do business in the State of South Carolina.
- H. Affix thereto a certified and current copy of the power of attorney.

END OF SECTION 00 61 13.13

SECTION 00 61 13.16

PAYMENT BOND FORM

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Utilize AIA Document A312 - 2010 Payment Bond Form. Document is incorporated by reference, Contractor is responsible to obtain a properly licensed form for use on the project.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 GENERAL

- A. A Labor and Material Payment Bond in the amount of the contract is required.
- B. Include the cost of providing bonds in the Base Bid.
- C. Deliver the required bonds to the Owner no later than three days following the date of execution of the Contract. If the Work is to be commenced prior thereto in response to a letter of intent, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section.
- D. Write bonds on the forms contained or referenced herein.
- E. Write bond in the amount of the Contract Sum.
- F. Date bonds on the date of the Contract.
- G. Issue bonds by sureties and execute by an attorney-in-fact, on behalf of the surety, who is authorized to do business in the State of South Carolina.
- H. Affix thereto a certified and current copy of the power of attorney.

END OF SECTION 00 61 13.16

SECTION 00 62 33

ROOF MANUFACTURER'S ACKNOWLEDGMENT

PART 1 GENERAL

1.1 FROM:

- A. Roofing Contractor: _____
- B. Address: _____
- C. Phone: _____ Email: _____

1.2 FOR:

- A. Owner: Dorchester School District 2
- B. Project: Beech Hill ES Sections 1 and 3 Roof Replacement
- C. REI Project No.: R25CHS-031
- D. Address: 1001 Beech Hill Rd Summerville, South Carolina 29485

1.3 ACKNOWLEDGEMENT

- A. This is to advise the Owner that having thoroughly reviewed the Specifications and Drawings contained within the Project Manual dated 10-10-2025, the above-titled project, we acknowledge that the roof system(s) and flashing system(s) specified are suitable for the issuance of the specified Manufacturer's warranty on this project and have been tested and approved for the wind uplift pressures and specified external fire resistance rating outlined in the project specifications. Having reviewed the project requirements in detail, the Manufacturer will provide a written response of exceptions or exclusions to the Engineer through the contractor as otherwise outlined in the Advertisement or Invitation for Bids, if conflicts exist between the Manufacturer's warranty requirements and the above listed documents. Exceptions not submitted accordingly are subject to rejection. The manufacturer also certifies that the installer is approved, authorized, or licensed by the manufacturer to install the specified roof system and is eligible to provide the specified manufacturer's warranty. The manufacturer will comply with the specified requirements for on-site technical support.

1.4 EXECUTED BY:

- A. Manufacturer's Company Name: _____
- B. Designated Reviewer Name and Title: _____
- C. Signature: _____ Date: _____

END OF SECTION 00 62 33

SECTION 00 62 73
SCHEDULE OF VALUES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Utilize the following Schedule of Values as the basis for this project.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

SCHEDULE OF VALUES

In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO: **R25CHS-031**

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED (NOT IN D OR E)	G		H BALANCE TO FINISH (C - G)	I RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD		TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)		
	Pre-Construction Activities Mobilization Demolition Rough Carpentry Materials Rough Carpentry Labor Prep for Reroofing Materials Prep for Reroofing Labor Roof Insulation Materials Roof Insulation Labor Metal Roof Panels Materials Metal Roof Panels Labor Metal Wall Panels Materials Metal Wall Panels Labor Thermoplastic Single Ply Materials Thermoplastic Single Ply Labor Sheet Metal Materials Sheet Metal Labor Quantity Allowance #1 Quantity Allowance #2 Quantity Allowance #3 Quantity Allowance #4 Quantity Allowance #5								

SCHEDULE OF VALUES

In tabulations below, amounts are stated to the nearest dollar.

Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO: **R25CHS-031**

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	%(G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
			FROM PREVIOUS APPLICATION (D + E)	THIS PERIOD					
	Demobilization								
	GRAND TOTALS	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%	\$0.00	

SECTION 00 63 13

REQUEST FOR INTERPRETATION

PART 1 GENERAL

1.1 REQUEST FOR INTERPRETATION

- A. RFI No.: _____
- B. Project: Beech Hill ES Sections 1 and 3 Roof Replacement
- C. REI Project No. R25CHS-031
- D. Request Date: _____
- E. From: _____ (Company Name)

1.2 REFERENCE

- A. Specification Section: _____ Paragraph: _____
- B. Drawing Sheet: _____ Detail No(s): _____

1.3 DESCRIPTION OF REQUEST

- A. _____

- B. Signed by: _____
- C. Signature: _____

1.4 REI RESPONSE

- A. _____

- B. Attachments: _____

- C. Response Date: _____
- D. Signed by: Gustavo Gonzales
- E. Signature: _____

SECTION 00 63 25
SUBSTITUTION REQUEST FORM

PART 1 GENERAL

1.1 SUBSTITUTION REQUEST INFORMATION

- A. Project: Beech Hill ES Sections 1 and 3 Roof Replacement
- B. REI Project No. R25CHS-031
- C. Request Date: _____

1.2 REFERENCE

- A. Specification Section: _____ Paragraph(s): _____

1.3 DESCRIPTION

- A. Manufacturer Name: _____
- B. Product Name: _____
- C. General Description of Substitution Request: _____

1.4 CERTIFICATION

- A. The undersigned certifies:
 - 1. Proposed substitution has been investigated and determined that it meets or exceeds the quality level of the specified product.
 - 2. Same warranty will be furnished for proposed substitution as for specified product.
 - 3. Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
 - 4. Proposed substitution does not affect dimensions and functional clearances.
 - 5. Payment will be made for changes to building design, including engineering design, detailing, and construction costs caused by the substitution.
 - 6. Contractor waives right to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.
- B. Submitted by (Print Name): _____
- C. Contractor Company Name: _____
- D. Signature: _____

1.5 ATTACHED SUPPORTING DATA

A. The following items are attached to this substitution request:

1. ☐ Product Data
2. ☐ Test Reports
3. ☐ Applicable Drawings
4. ☐ (_____)
5. ☐ (_____)

1.6 ENGINEERS ACTION

A. This substitution request is:

1. ☐ Approved
2. ☐ Approved as noted
3. ☐ Rejected - utilize specified materials
4. ☐ Rejected due too late submittal - utilized specified materials

B. Signed by: Gustavo Gonzales

C. Signature: _____

END OF SECTION 00 63 25

SECTION 00 63 55
CHANGE PROPOSAL FORM

PART 1 GENERAL

1.1 CHANGE PROPOSAL FOR:

- A. Change Proposal No. _____
- B. Project: Beech Hill ES Sections 1 and 3 Roof Replacement
- C. REI Project No. R25CHS-031
- D. From (Contractor): _____
- E. Description of Change: _____

1.2 CHANGE BREAKDOWN

- A. Materials:
 - 1. Total direct cost of materials: \$ _____
 - 2. Overhead & profit on A1 (15% max.): \$ _____
 - 3. Sales tax: \$ _____
 - 4. Shipping & transportation: \$ _____
 - 5. Total Materials (A1+A2+A3+A4): \$ _____
- B. Labor:
 - 1. Total manhours: _____ mh at \$ _____ /hr. = \$ _____
 - 2. Overhead & profit on B1 (15% max.): \$ _____
 - 3. Total Labor (B1+B2): \$ _____
- C. Equipment Rental:
 - 1. Equipment Rental
 - 2. Overhead & profit on C1 (6% max.): \$ _____
 - 3. Total Equipment Rental (C1+C2): \$ _____
- D. Subcontractors:
 - 1. Subcontractors: \$ _____

2. Overhead & profit on D1 (6% max.): \$ _____
3. Total Subcontractors (D1+D2): \$ _____
- E. Subtotal of Proposal (A5+B4+C3+D3): \$ _____
- F. Bonds (% of Subtotal (E)): \$ _____
- G. Total of Change Proposal (E+F): \$ _____
- H. Time Extension Request: _____ calendar days
- I. The Contractor agrees to perform the work outlined in this change proposal for the amount specified above in accordance with the Contract Documents if the work is authorized by the Owner.
 1. Contractor Signature and Date: _____
 2. Engineer Recommended Approval and Date: _____
 3. Owner Approval and Date: _____

END OF SECTION 00 63 55

SECTION 00 65 36

CONTRACTOR'S WARRANTY

PART 1 GENERAL

1.1 WARRANTY

- A. Know all men by these presents, that we, _____
(Contractor), having installed roofing system, flashings and sheet metal and performed exterior wall repairs on the Beech Hill ES Sections 1 and 3 Roof Replacement under contract between Dorchester School District 2 and Contractor, warrant to the Owner with respect to said work that for the period of 5 years from date of substantial completion of _____, 20____, the work shall be watertight and free from defects, provided however the following are excluded from this Warranty: 1) defects or failures resulting from abuse by the Owner, 2) damages caused by fire, tornado, hail, hurricane, acts of God, wars, vandalism, riots or civil commotion, and 3) defects in design involving failure of structural frame, load bearing walls, and/or foundations. We agree that should any leaks occur in the work we will perform emergency repairs within 24 hours' notice and perform permanent repairs promptly in a manner to restore the work to a watertight condition by methods compatible to the system, acceptable under industry standards and general practice, and acceptable to the Manufacturer, all at no expense to the Owner. We further agree that for the period specified below, we will make repairs at no expense to the Owner to defects which may develop in the work in a manner compatible to the system, acceptable under industry standards and general practice as established by the Engineer and acceptable to the Manufacturer.
- B. We agree to attend two post construction field inspections: the first to occur two years from the date of commencement of the Contractor's Warranty and the second no earlier than one month prior to the Contractor's Warranty expiration date and to promptly complete corrective actions requested by Owner, Engineer, or Manufacturer at no additional cost to the Owner.

1.2 EXECUTED BY

- A. Contractor: _____
- B. Authorized Officer Name and Title: _____
- C. Signature: _____ Date: _____

1.3 NOTARIZED BY:

- A. I, _____ (print name), a Notary Public for _____ County of _____ (State), do hereby certify that _____ (officer listed above) personally appeared before me this day and acknowledged the due execution of the foregoing instrument. Witness my hand and official seal, this _____ day of _____, 20 _____. My commission expires ____ of _____, 20 ____.
- B. Signed: _____

(OFFICIAL SEAL)

END OF SECTION 00 65 36

SECTION 00 65 37

ASBESTOS FREE WARRANTY

PART 1 GENERAL

1.1 FOR

- A. Owner: Dorchester School District 2
- B. Project: Beech Hill ES Sections 1 and 3 Roof Replacement
- C. Project Address: 1001 Beech Hill Rd Summerville, South Carolina 29485

1.2 WARRANTY

- A. Date of Substantial Completion: _____
- B. Know all men by these presents, that we, _____
(Contractor) having furnished labor, materials, equipment and/or supplies, removed existing roof system; installed new roof system and/or miscellaneous components; from, to and/or on the above referenced project under contract between the Owner and Contractor, warrant to Owner with respect to said work that no materials containing asbestos fibers were incorporated into the work, and that, to our knowledge and belief, no materials containing asbestos remain in or are covered by the work.
- C. Exceptions: _____ If there are no exceptions, state "None".

1.3 EXECUTED BY

- A. Contractor: _____
- B. Authorized Signing Officer Name: _____
- C. Authorized Signing Office Title: _____
- D. Signature: _____ Date: _____

1.4 NOTARIZED BY:

- A. I, _____ (print name), a Notary Public for _____ County of _____ (State), do hereby certify that _____ (officer listed above) personally appeared before me this day and acknowledged the due execution of the foregoing instrument. Witness my hand and official seal, this _____ day of _____, 20 _____. My commission expires _____ of _____, 20 _____.

B. Signed: _____

(OFFICIAL SEAL)

END OF SECTION 00 65 37

SECTION 00 72 13

GENERAL CONDITIONS OF THE CONTRACT

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. AIA Document A201 - 2017 General Conditions of the Contract for Construction.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

DRAFT AIA® Document A201™ – 2017

General Conditions of the Contract for Construction

for the following PROJECT:

(Name and location or address)

<< >>
<< >>

THE OWNER:

(Name, legal status and address)

<< >>< >>
<< >>

THE ARCHITECT:

(Name, legal status and address)

<< >>< >>
<< >>

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ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or

relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as

the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and

similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will

specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in

number and means a Subcontractor or an authorized representative of the Subcontractor. The term “Subcontractor” does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term “Sub-subcontractor” is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor’s Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor’s Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;

- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
 - .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
 - .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
 - .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
 - .5 damage to the Owner or a Separate Contractor;
 - .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- or

.7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;

- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed

by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the

procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect

timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract

Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work

properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term “Claim” also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker’s decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor’s Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party

provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

SECTION 00 73 00

SUPPLEMENTARY CONDITIONS

PART 1 GENERAL

1.1 SUMMARY

- A. The following supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction", AIA Document A201, 2017 edition. All unaltered provisions shall remain in effect.
 - 1. Substitute "Engineer" for "Architect" in all sections of this "Project Manual" such that the Engineer will perform those duties and responsibilities of the Architect with respect to this Contract with the express exclusion of the practice of architecture.
 - 2. Change to read:
 - a. "for the following PROJECT: Beech Hill ES Sections 1 and 3 Roof Replacement
 - b. THE OWNER: Dorchester School District 2
 - c. THE ENGINEER: REI Engineers, Inc."

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 ARTICLE 1 - GENERAL PROVISIONS

- A. Add:

"1.2.4 All work shall conform to Contract Documents. No change there from shall be made without a review by the Engineer. Where more detailed information or an interpretation of the Contract Documents is needed, the Contractor, before proceeding with the work, shall refer the matter to the Engineer who will furnish information or interpretation in the form of a Field Order or other written forms or drawings. Where only part of the work is indicated, similar parts shall be considered repetition. Where any detail is shown and the components therefore are fully described, similar details shall be construed to require equal materials and construction."

3.2 ARTICLE 2 – OWNER

- A. No modifications.

3.3 ARTICLE 3 – CONTRACTOR

- A. 3.2.2" First sentence: add the words "conceptual and" between "are" and "complimentary".
- B. 3.2.3: Change "such form as the Architect may require" to read "writing to the Engineer".
- C. Add:

1. "3.2.5 The Owner is entitled to reimbursement (in the form of reduced contract amount) from the Contractor for amounts paid to the Engineer for evaluating and responding to the Contractor's requests for information that are not prepared in accordance with the Contract Documents or where the requested information is available to the Contractor from a careful study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.
 2. 3.2.6 Should a difference occur in or between the drawings or specifications, between divisions or sections or between details on the drawings, the Contractor shall be deemed to have estimated the more expensive product or method indicated, unless he shall have asked for and obtained a decision in writing from the Engineer for submission of proposals as to which product or method shall be required."
- D. 3.7.4: First Sentence: change "14 days" to read "48 hours".
- E. 3.8.1: Second sentence: add the words "and Engineer" between "Owner" and "may".
- F. 3.12.9: Delete the word "approval" in the second sentence and substitute the word "acceptance".

3.4 ARTICLE 4 - ARCHITECT

- A. 4.2.2: Add the following: "The Contractor shall reimburse (in the form of reduced contract amount) the Owner for compensation paid to the Engineer for additional site visits made necessary by the fault, neglect, or request of the Contractor or by defects or deficiencies in the work."
- B. Add: "4.2.4.1 Instructions issued by the Engineer to the Contractor shall be adjudged an interpretation of the Contract requirements and not an act of supervision. The Engineer has no authority, nor accepts any responsibility, either directly or implied, to direct and superintend the construction operations."

3.5 ARTICLE 5 - SUBCONTRACTORS

- A. 5.2.1: Delete the words, "as soon as practicable," and substitute the words, "within seven (7) days" in the first sentence and, add to the end of the paragraph, "An additional purpose of this submission is to verify the list of subcontractors with the list submitted at the bid opening."
- B. 5.4.3: In the second sentence, change "nevertheless remain" to read "not be".

3.6 ARTICLE 6 – CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

- A. No modifications.

3.7 ARTICLE 7 - CHANGES IN THE WORK

- A. Add:
1. "7.2.2 The allowance for overhead and profit combined, included in the total cost to the Owner, shall be based on the following schedule:
 - a. 7.2.2.1 For the Contractor, for any work performed by the Contractor's own forces, 15 percent of the cost.

- b. 7.2.2.2 For the Contractor, for work performed by his Subcontractor, 6 percent of the amount due the Subcontractor.
 - c. 7.2.2.3 For each Subcontractor or Sub-subcontractor involved, for any work performed by that Contractor's own forces, 15 percent of the cost.
 - d. 7.2.2.4 For each Subcontractor, for work performed by his sub-subcontractors 6 percent of the amount due the sub-subcontractor.
 - e. 7.2.2.5 Cost shall be limited to the following: Cost of materials, including sales tax and cost of delivery, cost of labor, including Social Security, Old Age and Unemployment Insurance (labor cost may include a pro rata share of Foreman's time only in case an extension of Contract Time is granted on account of the change); Workmen's Compensation Insurance; Rental Value of power tools and equipment.
 - f. 7.2.2.6 Overhead shall include the following: Bond premiums, supervision, superintendence, wages of timekeepers, watchmen and clerks, small tools, incidentals, general office expense and all other expenses not included in Cost.
 - g. 7.2.2.7 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and Subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also."
- B. 7.3.4: In the first sentence, change "as set forth in the Agreement, or if no such amount is set forth in the Agreement" to read "as stated in Specification Section 00 63 55 - Change Proposal Form."
- C. 7.3.9: Change the first sentence to read "Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment in a non-disputed amount, or an interim amount determined by the Engineer for Work completed under the Construction Change Directive in Applications for Payment"

3.8 ARTICLE 8 - TIME

- A. Add:
- 1. "8.3.1.1 Adverse weather conditions shall be defined as weather extremes in precipitation, temperature, and/or winds: 1) Temperature less than 39 degrees and falling, 2) Percent chance of rain or actual rain event greater than 30% for more than four hours of the work day (forecast utilized shall be no sooner than the day before), 3) Wind speed greater than 15 MPH. For this purpose, the anticipated adverse weather days allowed per month, non-cumulative, are as follows:
 - a. January: 10 days
 - b. February 9 days
 - c. March: 11 days
 - d. April: 8 days
 - e. May: 9 days

- f. June: 9 days
- g. July: 11 days
- h. August: 9 days
- i. September: 7 days
- j. October: 6 days
- k. November: 7 days
- l. December: 9 days

- 2. 8.3.1.2 The Owner will be flexible when considering adverse weather days which will not permit the Contractor to pursue the work. For the Owner's consideration, a letter documenting the number of days of inclement weather that occurred during the preceding month shall be submitted by the Contractor with his monthly application for payment. Failure to submit the request with the monthly application will result in rejection of any consideration for the number of days the preceding month."

B. Add:

- 1. "8.4 Liquidated Damages:
 - a. 8.4.1 If the Contractor has not substantially completed the work within the specified contract time period and no time extensions have been granted, the contract amount shall be reduced by the sum of five hundred (\$500) dollars per day for each day in excess of the scheduled date of completion. Deductions from the original contract amount will be documented in the form of a Change Order.
 - b. 8.4.2 Refer to Specification Section 01 77 00 - Closeout Procedures for liquidated damages for punch list items and closeout documents."

3.9 ARTICLE 9 - PAYMENTS AND COMPLETION

- A. 9.7 Delete in its entirety.
- B. 9.8.1: Replace with: "Substantial Completion shall be defined as a finished job where all phases of construction, installation, and clean-up are fully completed and ready for substantial completion inspection so that the Owner can occupy or utilize the work for its intended use"
- C. 9.8.3: Add to the end of the paragraph: "The Engineer will perform no more than one (1) inspection to determine whether the Work has attained Substantial Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement (in the form of a deductive change order) from the Contractor for amounts paid to the Engineer for any additional inspections."
- D. 9.9.1: Replace with: "The Owner may occupy premises and maintain normal building functions during the contract period. Contractor will cooperate with Owner to minimize conflict and facilitate Owner's operations. Safety of building occupants is of primary importance. Any areas subject to hazard and/or falling material/debris to be barricaded to prevent access."

- E. 9.9.2: Delete in its entirety.
- F. 9.9.3: Delete in its entirety.
- G. 9.10.1: Add to the end of the paragraph: "The Engineer will perform no more than one (1) inspection to determine whether the Work has attained Final Completion in accordance with the Contract Documents. The Owner is entitled to reimbursement (in the form of a deductive change order) from the Contractor for amounts paid to the Engineer for any additional inspections."
- H. Add: "9.10.2.1The final payment of retained amount due the Contractor shall not become due until the Contractor has furnished to Owner through the Engineer an affidavit signed, sworn and notarized to the effect that all payments for materials, services, or any other reason in connection with the Contract have been satisfied and no claims or liens exist against the Contractor in connection with this Contract. If the Contractor and Owner form possible liens or claims against the sub-contractor, the Contractor shall state in an affidavit that no claim or liens exist against any subcontractor to the best of the Contractor's knowledge, and if any appear afterwards the Contractor shall save the Owner harmless on account thereof. The forms to be used shall be AIA Document G706 and G706A, current editions. Other closeout requirements before final payment shall become due are listed in Division Section 01 77 00 "Closeout Procedures"."

3.10 ARTICLE 10 – PROTECTION OF PERSONS AND PROPERTY

- A. No modifications.

3.11 ARTICLE 11 - INSURANCE AND BONDS

- A. The following items modify the Insurance requirements for South Carolina K-12 facilities:
 - 1. Add:
 - a. "11.1.1.1 The insurance required by subparagraph 11.1.1 shall be written for not less than the following, or greater if required by law, and shall be written on an occurrence basis. The Contractor hereby waives all right of recovery against the Engineer, the Owner, and their respective officers, directors, employee, agents, and representatives, with respect to claims covered by insurance obtained pursuant to these insurance requirements. The Contractor agrees to cause its Worker's Compensation, General Liability and Automobile Liability insurers to waive their rights of subrogation against the Engineer, the Owner, and their respective officers, directors, employees, agents, and representatives.
 - 1) 11.1.1.1.1 Worker's Compensation:
 - (a) State: Statutory
 - (b) Applicable Federal (e.g. Longshoreman's): Statutory
 - (c) Employer's Liability: \$2,000,000
 - 2. Add:

- a. "11.1.5 The Contractor shall not commence work under this contract until obtaining all insurance required under the conditions of the contract, nor shall the Contractor allow any subcontractor to commence work on his subcontract until all similar insurance required of the subcontractor has been so obtained. The Contractor shall furnish the Owner with satisfactory evidence that he has secured and will maintain the required insurance coverage until beneficial occupancy by the Owner or final acceptance of the Project."
 - b. 11.1.6 The contract amount shall be the insurable value unless otherwise noted."
 - c. 11.1.7 There shall be an endorsement in each of the above policies reading as follows: 'It is hereby agreed that in event of a claim arising under this policy, the company will not deny liability by reason of the insured being a state, county, municipal corporation or governmental agency.'
3. Add: "11.2.3 The Owner will be responsible for providing Builders' Risk Insurance, including the perils of fire, extended coverage, vandalism and malicious mischief in an amount of not less than one hundred percent (100%) of the insurable value of all the work, and the coverage written on the completed value form, including extended coverage endorsement form, and malicious mischief endorsement form, or on the "All Risk" completed value form, with a company authorized to do business in South Carolina. Such insurance shall be for the benefit of the Contractor, Owner, and all subcontractors engaged by the Contractor on this project, as their respective interests may appear. The Builders' Risk Insurance must be dated and in force by the date indicated in the Work Order to begin work. The insurance coverage required by the contract document shall be in compliance with the laws of the state and shall be placed with a licensed resident local agent in South Carolina who represents insurance companies authorized to do business in the State of South Carolina. A deductible of \$2,500 shall apply to each loss incident. The deductible shall be borne by the Contractor."
4. Add: "11.2.4 The Contractor and/or their subcontractors must report any loss to the Owner or Engineer who in turn will notify the insurance agency as soon as the loss occurs in order that the damage be assessed before job conditions are disturbed. Formal claims against this policy shall be submitted within fourteen (14) days after occurrence."
5. Add: "11.4.3 The Contractor shall furnish a Performance and Payment Bond in an amount at least equal to one hundred percent (100%) of the contract price as security for the faithful performance of the contract and the payment of all persons performing labor on the project under the contract and furnishing materials, equipment or supplies in connection with the contract, including security for the payment of all unemployment contributions which become due and payable under South Carolina Employment Security Law. The Performance and Payment Bond (AIA Document A312) shall be executed by a Surety Company authorized to do business in the State of South Carolina, and the contract instrument of bonds must be countersigned by a duly appointed and licensed agent resident of South Carolina. Cost of said bond shall be included in the contract sum."
- B. Add: 11.1.5 REI Engineers shall be named as "Additional Insured" in the Workers Compensation, Automobile Liability, Comprehensive General Liability and Umbrella Liability policies."
- C. Add:

1. "11.6 Indemnity Agreement: Contractor agrees to indemnify and hold harmless the Owner from and against claims, losses, liabilities, costs, expenses, charges, damages or judgment arising from, or relating to, this agreement, including but not limited to attorney's fees, with respect to any cause arising out of, resulting from, or in connection with (a) any breach by Contractor of any clause, condition or provision of this Agreement; (b) any breach or violation by Contractor of any Indemnity Agreement applicable criminal or civil law; (c) any bodily injuries, including death at any time resulting therefrom, and/or property damage from any cause whatsoever, arising out of, incidental to, or in connection with the on-going or completed work, whether or not due to any act of omission or commission including negligence, excluding the sole negligence of The Owner, its employees or agents; and (d) any other cause resulting from any act or failure to act by Contractor in accordance with this Agreement. Contractor shall promptly assume the defense of any claim, suit or action within the scope of this indemnification at its expense, upon being notified thereof. Contractor shall release The Owner from and indemnify and hold harmless The Owner from and against any claims for injuries, including death arising out of the use of equipment, tools, or facilities, whether or not based upon the condition thereof, or any alleged negligence of The Owner in permitting the use thereof of tools, equipment or facilities owned by The Owner. Contractor understands and agrees that such permitted use of any of The Owner's tools, equipment or facilities does not stop The Owner from limiting or denying such use as The Owner so decides.
 - a. 11.6.1 The following paragraphs shall apply and must be stated on your Public Liability Insurance Certificates: "Contractor agrees to indemnify and hold harmless the Owner from and against claims, losses, liabilities, costs, expenses, charges, damages or judgments, resulting from, or in connection with any bodily injury, including death at any time resulting therefrom, and/or property damage, arising out of, incidental to, or in connection with the on-going or completed work, including negligence, committed in whole or in part by the indemnitor, but excluding the sole negligence of The Owner, its employees or agents.""

3.12 ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

- A. 12.2.2.1: In every instance, add the words "or Engineer" after "Owner".
- B. 12.2.2.1: In the third sentence, delete the words "one year".
- C. 12.2.2.2: Delete the words "one year".
- D. 12.2.2.3: Delete in its entirety.
- E. 12.2.5: In the second sentence, delete the words "one year".
- F. 12.3 Change to read: "If the Owner and Engineer prefer to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner and Engineer may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made."

3.13 ARTICLE 13 - MISCELLANEOUS PROVISIONS

- A. 13.6: Payments due and unpaid under the Contract Documents shall not bear interest.

3.14 ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

- A. 14.1.3: Change to read: "If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' written notice to the Owner and Engineer, terminate the Contract and recover from the Owner payment for Work executed, including reasonable overhead and profit, costs incurred that are documented, actually verifiable and proven as legitimate expenses up to the date of termination as allowed in the contract and acceptable to the Engineer for the reason of such termination and damages."

3.15 ARTICLE 15 - CLAIMS AND DISPUTES

- A. 15.1.6.2: Change "scheduled construction" to read "Critical Path schedule".

END OF SECTION 00 73 00

SECTION 01 11 00
SUMMARY OF WORK

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Name: Beech Hill ES Sections 1 and 3 Roof Replacement
- B. Project Address: 1001 Beech Hill Rd, Summerville, South Carolina 29485
- C. Owner: Dorchester School District 2
- D. Engineer: The Contract Documents, dated 10-10-2025, were prepared by REI Engineers, Inc.
- E. This work includes the provision of labor, material, equipment, supervision and administration to integrate the work outlined in these specifications into the total building system such that no leakage into the system occurs. In general, the scope of work in the Base Bid includes:
 - 1. Low Slope Roof Replacement - Roof Area 1:
 - a. Remove and dispose of the roof system including flashings and sheet metal down to the steel deck.
 - b. Secure the existing steel deck to structural framing members as specified in Section 05 01 30 "Steel Roof Deck Repair and Securement".
 - c. Provide Gypsum Substrate loose laid.
 - d. Provide 2" Roof Insulation mechanically attached.
 - e. Provide 1.5" Roof Insulation adhered in foam adhesive.
 - f. Provide Cover Board adhered in foam adhesive.
 - g. Fully adhere thermoplastic single ply membrane along with flashings and accessories.
 - h. Replace sheet metal flashings and trim.
 - i. Provide a complete, watertight, 20-year warrantable roof assembly.
- F. Provide electrical, plumbing, mechanical, and other related trade work necessary to facilitate project operations. Relocate or raise conduit, HVAC equipment, curbs, and/or plumbing necessary to comply with the requirements of these documents and conform to the requirements of the State Building Code.
 - 1. Conduct construction operations so that heat, air conditioning, ventilation, electrical, telephone, gas, water, sanitary, storm sewer, and any other service required for the building operations are maintained at all times during normal working hours. Any shutdowns or interruptions shall be coordinated with and approved by the owner.

- G. General requirements and specific recommendations of the material manufacturers are included as part of these specifications. The manufacturers' specifications are the minimum standards required for the completed systems. Where specific items listed herein improve the standards required by the manufacturers, they take precedence where their compliance does not affect the manufacturers' guarantee or warranty provisions.
- H. Act as the Project Expeditor and coordinate work and schedules of others hired.

1.2 ASBESTOS CONTAINING ROOFING MATERIALS (ACRM):

- A. Sample Testing Results:
 - 1. No Asbestos Containing Roofing Materials (ACRM) have been detected in test samples of roof areas included in Contract.
- B. It is the intention of these specifications that no asbestos bearing materials be incorporated into the work. In the event the contractor determines unanticipated asbestos bearing materials present in the building components, stop work in the affected area, notify the Engineer and Owner, and provide temporary protection as required. Costs incurred due to the presence of hidden or unanticipated asbestos bearing materials will be authorized by Change Order to this contract.

1.3 REFERENCE STANDARDS

- A. CSI/CSC MF - Masterformat; 2016.

1.4 CONTRACT

- A. Project constructed under a single prime general construction contract between Owner and Contractor.

1.5 WORK UNDER OTHER CONTRACTS

- A. Separate Contract: Owner may award a separate contract for performance of certain construction operations at Project site.
 - 1. None
- B. Cooperate with separate contractors so work on those contracts are carried out smoothly without interfering with or delaying Work under this Contract.

1.6 SPECIFICATION FORMATS AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 49-division format and CSI/CSC MF numbering system.
 - 1. Section Identification: The Specifications use section numbers and titles to cross-reference Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Interpret words and meanings as appropriate. Infer words implied, but not stated, as the sense requires. Interpret singular words as plural and plural words as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Perform requirements expressed in the imperative mood. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a. The words "shall" "shall be" or "shall comply with" depending on the context, are implied where a colon (:) is used within a sentence or phrase.

END OF SECTION 01 11 00

SECTION 01 21 00

ALLOWANCES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements governing allowances.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section, including but not limited to:
 - 1. Section 05 01 30 - Steel Roof Deck Repair and Securement
 - 2. Section 06 10 00 - Rough Carpentry

1.3 ABBREVIATIONS

- A. Abbreviations for typical units of measurement:
 - 1. Square Foot (SF)
 - 2. Board Foot (BF)

1.4 QUANTITY ALLOWANCES

- A. Include the specified quantity allowances in the base bid. Use the unit price submitted on the Bid Form to compute the quantity allowances. The quantities indicated on the Bid Form are estimated quantities only for the purpose of comparing bids. Compensation for the unit price bid made for the exact quantity of work performed under the unit price item. Deductive amounts of unit price work included in the Contract Sum are calculated at 100% of the quoted add unit price.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SCHEDULE OF ALLOWANCES

- A. Quantity Allowances:
 - 1. Repair 500 SF of Corroded Steel Deck (Corrosion Degree 1) with Coating. Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.
 - 2. Repair 50 SF of Steel Deck (Corrosion Degree 2) with Steel Plates. Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.
 - 3. Overlay 50 SF of Deteriorated Steel Deck (Corrosion Degree 3) with Steel Deck. Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.

4. Replace 50 SF of Deteriorated Steel Deck (Corrosion Degree 4). Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.
5. Replace 200 BF of Deteriorated Wood Blocking. Refer to Section 06 10 00 - Rough Carpentry.

END OF SECTION 01 21 00

SECTION 01 22 00

UNIT PRICES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Administrative and procedural requirements for unit prices.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section, including but not limited to:

1. Section 05 01 30 - Steel Roof Deck Repair and Securement
2. Section 06 10 00 - Rough Carpentry

1.3 DEFINITION

A. Unit price is an amount proposed by Bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 ABBREVIATIONS

A. Abbreviations for typical units of measurement:

1. Square Foot (SF)
2. Board Foot (BF)

1.5 UNIT PRICE MEASUREMENT

- A. Prior to performing work under a unit price as specified herein, notify the Engineer to allow for measurement of the actual quantities of work. Work performed under these items without prior approval and measurement is at the Contractor's expense.
- B. Maintain a daily log including visual documentation (i.e. digital photographs) showing dates, location and exact quantities of unit price work.
- C. Owner and Engineer reserve the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent party.

1.6 UNIT PRICE PAYMENT

- A. Include in unit prices costs associated with performing the unit price work including but not limited to labor, material, equipment, insurance, applicable taxes, overhead and profit, bonds, etc.

1.7 UNIT PRICE PERFORMANCE

- A. Install unit price work in accordance with the applicable specification sections and Contract Drawings.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. Provide a unit price for:
1. Repair Corroded Steel Deck (Corrosion Degree 1) with Coating. Unit of Measurement: Square Foot (SF). Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.
 2. Repair Steel Deck with Steel Plates. Unit of Measurement: Square Foot (SF). Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.
 3. Overlay Deteriorated Steel Deck (Corrosion Degree 3) with Steel Deck. Unit of Measurement: Square Foot (SF). Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.
 4. Replace Deteriorated Steel Deck (Corrosion Degree 4). Unit of Measurement: Square Foot (SF). Refer to Section 05 01 30 - Steel Roof Deck Repair and Securement.
 5. Replace Deteriorated Wood Blocking. Unit of Measurement: Board Foot (BF). Refer to Section 06 10 00 - Rough Carpentry.

END OF SECTION 01 22 00

SECTION 01 23 00

ALTERNATES

PROPEPART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Administrative and procedural requirements for alternates.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the Base Bid amount if Owner decides to accept a corresponding change either in the amount of construction or in the products, materials, equipment, systems or installation methods described in the Contract Documents.

1.4 ALTERNATES

- A. Indicate on the Bid Form whether the alternate bid amount is to added to or deducted from the base bid in the event the alternate bid is accepted.
- B. The Owner reserves the right to accept or reject any or all of the alternate bids.
- C. Responsible for determining to his own satisfaction and for his own purposes the limits and extent of the work affected by the alternate bids and to make proper allowance therefore in the submission of alternate bid.
- D. Include the cost of each alternate bid as specified in the technical specification sections and as described on the drawings. Perform work required by the alternate bids in accordance with applicable specifications and drawings of the trade section affected.
- E. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate selected alternates into the Work. No other adjustments are made to the Contract Sum.
- F. The Owner reserves the right to delay the acceptance of the alternate bids during the bid holding period prior to accepting the contract without a change in the dollar amount of the alternate bids.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 SCHEDULE OF ALTERNATES

- A. Alternate No. 1: Roof Area 3 - Remove and dispose of the roof system including flashings and sheet metal down to the steel deck. Provide 2" Roof Insulation loose laid. Provide 1.5" Roof Insulation mechanically attached. Provide self-adhering underlayment. Provide standing seam metal roof panel system along with flashings, trim and accessories. Provide a complete 20-year warrantable roof assembly with 30-year finish warranty.

END OF SECTION 01 23 00

SECTION 01 25 00
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. This Section specifies administrative and procedural requirements for handling requests for substitutions after award of Contract.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 DEFINITIONS

- A. Substitutions: Requests for changes in products, materials, and equipment, of construction required by Contract Documents proposed by the Contractor are considered requests for "substitutions". The following are not considered substitutions:
 - 1. Revisions to Contract Documents requested by the Owner or Engineer.
 - 2. Specified options of products and construction methods included in Contract Documents.
 - 3. Determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

- A. Submit requests for acceptance of equivalent items in writing to the Engineer during the submittal process. No substitutions considered after acceptance of project submittals.
- B. Substitutions after award are considered solely for convenience and approved by Change Order in form of credit to the Owner. Bear additional costs related to making the substituted material or system work including additional engineering, material or system modifications, and time considerations relating to material or system installation requirements.
- C. Provide information sufficient for the Engineer to make a determination of equivalent items. Engineer's determination of the equivalency of a product is final. The Engineer reserves the right to request information or documentation for evaluation including but not limited to the following:
 - 1. Provide a letter describing in detail proposed changes, substitutions, or deviations from the project or manufacturer's specifications.
 - 2. A written explanation of why substitutions should be considered is required.
 - 3. Statement indicating why specified product cannot be provided.

4. Coordination of information, including a list of modifications needed to other parts of the work necessary to accommodate proposed substitution.
5. Product data including drawings, descriptions, and fabrication/installation procedures.
6. Samples where applicable.
7. Material test reports from a qualified testing agency indicating the interpreting test results for compliance with requirements.
8. Contractor's certification that proposed substitution complies with requirements in the contract documents and is appropriate for applications indicated.
9. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
10. If requesting product substitution after bid award, provide cost information including proposal of change in the contract sum.

END OF SECTION 01 25 00

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Administrative and procedural requirements for handling and processing Contract modifications.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: A detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time will be issued by the Engineer along with supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Engineer are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within 5 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, propose changes by submitting a request for a change to Engineer.

1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.

2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits. If requested, furnish survey data to substantiate quantities.
 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 4. Include costs of labor and supervision directly attributable to the change.
 5. Include an updated Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
 6. Comply with requirements in Division 1 if the proposed change requires substitution of one product or system for product or system specified.
- C. Proposal Request Approval:
1. If sufficient contingency allowance funds remain, written approval will be provided by the Engineer in the form of an Allowance Authorization signed by the Engineer, Contractor and Owner.
 2. If contingency allowance funds are not available; upon approval by Owner, written approval will be provided by the Engineer in the form of a Change Order as provided in the Conditions of the Contract.
 - a. Form of Change Order: Owner or Engineer Standard Form submitted by the Engineer signed by the Contractor and Owner.
 - b. Do not commence work or purchase materials for such change orders until written approval is received in the form of an executed Allowance Authorization or Change Order.
 - c. An executed Change Order is the only legal document which can change the Contract Sum or Time.

1.4 SUPPLEMENTAL INSTRUCTIONS

- A. Supplemental instructions authorizing minor changes in the Work, not involving an adjustment to the Contract Sum or Contract Time, will be issued by the Engineer on Engineer's Supplemental Instructions form.

1.5 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: When the Owner and Contractor are not in total agreement on the terms of a Proposal Request; the Engineer may issue a Construction Change Directive on Engineer's Standard Form, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
1. The Construction Change Directive will contain a description of the change in the Work and designate the method followed to determine the change in the Contract Sum or Contract Time.
 2. Submit unit costs, equipment rates and labor rates as requested by the Engineer and agree upon submitted rates before the work progresses unless directed to proceed in the absences of an agreement or in an emergency.

- B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive. Provide a copy of those records the Engineer.
 - 1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

END OF SECTION 01 26 00

SECTION 01 29 00
PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 DEFINITIONS

- A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 REFERENCE STANDARDS

- A. AIA G702 - Application and Certificate for Payment; 1992.
- B. AIA G703 - Continuation Sheet; 1992.
- C. AIA G706 - Contractor's Affidavit of Payment of Debts and Claims; 1994.
- D. AIA G706A - Contractor's Affidavit of Release of Liens; 1994.
- E. AIA G707 - Consent of Surety to Final Payment; 1994.

1.5 SUBMITTALS

- A. Sample Application for Payment Cover on AIA G702 .
- B. Schedule of Values: A schedule of values on AIA G703 Continuation Sheet consisting of a detailed breakdown of the Contract amount showing separate figures for labor and materials. The work listed under the various sections and subsections of the Specifications serve as the format for preparation.

1.6 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Submittals.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
 - a. Application for Payment Forms with Continuation Sheets

- b. Submittals Schedule
 - c. Contractor's Construction Schedule
 - 2. Submit the Schedule of Values to Engineer along with Submittals.
 - 3. Sub schedules: Where the Work is separated into phases requiring separately phased payments, provide sub schedules showing values correlated with each phase of payment.
- B. Format and Content: Use the sample Continuation Sheet provided in Section 00 62 73 - Schedule of Values.
- 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Application for Payment Number.
 - b. Application for Payment Date.
 - c. Engineer's project number.
 - d. Period to for Schedule of Values.
 - 2. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents.
 - 3. Provide several line items for principal subcontract amounts, where appropriate.
 - 4. Round amounts to nearest whole dollar; total to equal the Contract Sum.
 - 5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
 - 6. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.
 - 7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
 - 8. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
 - 9. Complete each item in the Schedule of Values and Applications for Payment. Include total cost and proportionate share of general overhead and profit for each item.
 - 10. Show temporary facilities and other major cost items that are not direct cost of work in place either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

11. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.7 APPLICATION FOR PAYMENT

- A. Submit one electronic pdf of the application for payment on AIA G702.
 1. Indicate the date for each progress payment. The period of Work covered by each application is the period indicated in the Agreement
 2. Provide on original AIA forms.
 3. Complete, notarize and execute each Application for Payment by a person authorized to legally sign documents.
 4. Show breakdown of the work with separate labor and material amounts on AIA G703 in accordance with the accepted Schedule of Values.
 5. Make each application consistent with previous applications and payments as certified by Engineer and paid for by Owner.
 6. Engineer will return incomplete applications without action.
- B. Payment Terms: Within 21 days of receipt of engineer-approved request, Owner shall make a progress payment to the Contractor on the basis of a duly certified and approved estimate of the work performed during the preceding calendar month under this Contract.
- C. Retainage: to ensure proper performance of this Contract, 3.5% of the amount of each estimate will be retained by the Owner until final completion.
 1. When a portion, or division, of Work as listed in the Schedule of Values is 100% complete, that portion of the retained funds which is allocable to the completed division will be released to the Contractor. No later than 10 days after receipt of retained funds from the Owner, the Contractor shall pay to the subcontractor responsible for such completed work the amount of retainage allocable to the subcontractor's work.
 2. Upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment.
- D. Match data of entries on the schedule of values and construction schedule. Include amounts of change orders issued before last day of construction period covered by the application.
- E. The Engineer reserves the right to contact material manufacturers directly, without contractor consent, to verify material invoices. Make material invoices available to the Engineer upon his request from the contractor or material manufacturer.
- F. When requesting payment for materials stored on site, submit with request an invoice for the materials and a certificate of insurance showing proof of coverage for the materials stored on site. Payment will be made only for stored materials. No payment will be made for anticipated overhead and/or profit.
- G. With each application for payment, also submit the following:

1. Unit Price Daily Logs: Submit copies of unit price daily logs and appropriate change order forms with each application for payment unless no unit price work was accomplished during the period covered by the application.
 2. AIA G706
 3. AIA G706A
- H. At substantial completion, submit an application for payment showing 100% completion for portion of the work claimed as substantially complete. Include documentation supporting claim that the work is substantially complete.
- I. At final completion, submit final application for payment with releases and supporting documentation not previously submitted and accepted, including but not limited to the following. Final payment not due until required documents have been submitted.
1. Project Closeout Submittals
 2. AIA G706
 3. AIA G706A
 4. AIA G707

END OF SECTION 01 29 00

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - a. Project Schedule
 - b. General project coordination procedures.
 - c. Coordination.
 - d. Daily Site Reporting
 - e. Administrative and supervisory personnel
 - f. Project meetings
 - g. Weekly Reports

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 SUBMITTALS

- A. Emergency contact list: Key personnel including home, office and mobile numbers, for the Owner, Contractor, Subcontractor(s), and Engineer
- B. Work schedule:
1. Indicate start date, crew size, production rate, completion date, etc.
 2. Provide illustrated schedule on an aerial map.

1.4 COORDINATION

- A. Coordinate construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Coordinate its operations with those included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.

2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- B. Coordinate the scheduling and sequence of operations with the Owner and Engineer.
- C. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Construction Schedule.
 2. Preparation of the Schedule of Values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-Construction conference.
 7. Pre-installation conferences.
 8. Project closeout activities.

1.5 PROJECT MEETINGS

- A. Pre-Construction Meeting
1. A Pre-Construction Meeting will be scheduled as soon as possible after the award of the contract. The Engineer's Representative will compile minutes of the meeting and will furnish a copy of the minutes to each person present.
 2. Attendance: Project Manager, Job Superintendent and Job Foreman, Owner, Engineer's Representative, manufacturer's representatives, installers of related work and other persons concerned with the installation and performance.
 - a. Provide 3 telephone numbers to contact the Contractor or his authorized representative in the event of an emergency after normal business hours.

3. Minimum Agenda: Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials suppliers, and the Project Manager; channels and procedures for communication; construction schedule, including sequence of critical work; contract documents, including distribution of required copies of Drawings and revisions; processing of Shop Drawings and other data submitted to the Project Manager for review; rules and regulations governing performance of the work and procedures for safety, first aid, security, quality control, housekeeping and related matters.
- B. Progress Meetings:
1. Attend monthly progress meetings for the purpose of informing the Owner and the Engineer regarding the status of the project. The Engineer will compile minutes of the meeting and will furnish a copy of the minutes to each person present.
 2. Attendance: Owner, Engineer, Contractor, Job Superintendent, material Supplier, and Subcontractors, as appropriate. Provide an updated job progress schedule at each weekly meeting. Be thoroughly familiar with the status of the project and be prepared to discuss and act upon situations that arise. The time, date and location of these meetings will be established during pre-construction conference.
 3. Minimum Agenda: Review of work progress; field observations, problems, and decisions; identification of problems which impede planned progress; maintenance of progress schedule; corrective measures to regain projected schedules; planned progress during succeeding work period; coordination of projected progress; maintenance of quality and work standards; processing of field decisions and Change Orders; effect of proposed changes on progress, schedule, and coordination; other business relating to work.
- C. Substantial Completion Inspection Meeting
1. Scheduled by Owner and Engineer upon written notification of substantial completion of work from the Contractor.
 2. Attendance: Owner, Engineer, Contractor, material manufacturer.
 3. Minimum Agenda: Walkover inspection, verification of substantial completion, identification of punch list items and identification of problems potentially impeding issuance of warranties.
- D. Final Inspection Meeting
1. Scheduled by Owner and Engineer upon written notification of final completion of work from the Contractor.
 2. Attendance: Owner, Engineer, Contractor.
 3. Minimum Agenda: Verification of final completion including the completion of the punch list items.

1.6 DAILY SITE REPORTING

- A. Upon arrival daily, Contractor's lead employee to report to the facilities office or department where they are working and inform the staff that they have arrived, their reasons for being there, and the number of personnel working. "Log/Sign In" as directed by the staff and show a photo I.D. with company logo.

END OF SECTION 01 31 00

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other miscellaneous submittals.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 SUBMITTAL PROCEDURE

- A. General: The Contractor is responsible for providing the submittals to the Engineer. Each submittal is required to be accepted in writing prior to commencement of work.
- B. Submission Requirements:
 - 1. Submit required submittals electronically in pdf format to the Engineer for review. The submittals will then be returned electronically to the Contractor with comments. Final submittals require written responses to submittal comments.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as specified below, commencing on Engineers receipt of submittal.
 - 1. Initial Review: Allow 7 work days for initial review of submittals.
 - 2. Allow 7 work days for processing each resubmittal.
 - 3. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- D. Identification:
 - 1. Submit as one pdf file with bookmarks for each scheduled item.
- E. Deviations: Highlight, encircle, or otherwise identify deviations from the Contract Documents on submittals and provide letter describing in detail proposed changes, substitutions, or deviations from the project or manufacturers specifications. Include a written explanation of why substitutions should be considered under the appropriate tab.
- F. Transmittal: Package submittals appropriately for transmittal. Engineer will discard submittals received from sources other than Contractor. Include Contractors certification stating that information submitted complies with requirements of the Contract Documents.
- G. Use for Construction: Use only final submittals with mark indicating action taken by Engineer in connection with construction.

1.4 SCHEDULE OF SUBMITTALS

- A. Refer to the applicable specification section for list of submittal requirements for each section.
- B. Submit the following submittal items electronically with a title page and/or pdf bookmark for each submittal item to meet the requirements specified herein:
 - 1. Section 00 52 13 - Copy of Executed Owner/Contractor Agreement along with Certificate of Insurance
 - 2. Section 00 61 13.13: Copy of Executed Performance Bond Form
 - 3. Section 00 61 13.16: Copy of Executed Payment Bond Form
 - 4. Section 00 62 33 - Roof Manufacturers Acknowledgment Form
 - 5. Section 01 14 00 - Work Restrictions
 - 6. Section 01 25 00 - Substitution Procedures
 - 7. Section 01 29 00 - Payment Procedures
 - 8. Section 01 31 00 - Project Management and Coordination
 - 9. Section 01 40 00 - Quality Requirements
 - 10. Section 01 77 00 - Closeout Procedures
 - 11. Section 05 01 30 - Steel Roof Deck Repair and Securement
 - 12. Section 06 10 00 - Rough Carpentry
 - 13. Section 07 22 16 - Roof Insulation
 - 14. Section 07 41 13 - Metal Roof Panels
 - 15. Section 07 42 13 - Metal Wall Panels
 - 16. Section 07 54 00 - Thermoplastic Single Ply Roofing
 - 17. Section 07 62 00 - Sheet Metal Flashing and Trim
 - 18. Section 22 14 26 - Roof Drains
 - 19. Shop Drawings: Shop drawings or letter stating installation of materials as detailed in the Contract Drawings unless properly authorized by the Engineer.
 - 20. Physical color samples as specified in the applicable specification section.

PART 2 PRODUCTS

2.1 SUBMITTALS

- A. General: Prepare and submit Submittals required herein and by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information is specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturers written recommendations.
 - b. Manufacturers product specifications.
 - c. Manufacturers installation instructions.
 - d. Manufacturers catalog cuts.
 - e. Wiring diagrams showing factory-installed wiring.
 - f. Printed performance curves.
 - g. Operational range diagrams.
 - h. Compliance with recognized trade association standards.
 - i. Compliance with recognized testing agency standards.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
 - 1. Preparation: Include the following information, as applicable: dimensions, identification of products, fabrication and installation drawings, schedules, coordination requirements and notation of dimensions established by field measurements.
 - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 42 inches.
- D. Samples: Prepare physical units of materials or products, including the following:
 - 1. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from the same material used for the Work, cured and finished in manner specified, and physically identical with the product proposed for use, and that show range of color and texture variations expected. Samples include, but are not limited to, partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

2. Submit three sets of Samples. Engineer will retain two Sample sets; remainder will be returned.
 3. Preparation: Mount, display, or package Samples in manner specified to facilitate review of qualities indicated. Prepare Samples to match Engineers sample where so indicated. Attach label on unexposed side.
 4. Submit Samples for review of kind, color, pattern, and texture for a final check of these characteristics with other elements and for a comparison of these characteristics between final submittal and component as delivered and installed.
 5. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity and used to determine final acceptance of construction associated with each set.
- E. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of engineers and owners, and other information specified.
- F. Product Certificates: Prepare written statements on manufacturers letterhead certifying that product complies with requirements.
- G. Installer Certificates: Prepare written statements on manufacturers letterhead certifying that Installer complies with requirements and, where required, is authorized for this specific Project.
- H. Manufacturer Certificates: Prepare written statements on manufacturers letterhead certifying that manufacturer complies with requirements. Include evidence of manufacturing experience where required.
- I. Material Certificates: Prepare written statements on manufacturers letterhead certifying that material complies with requirements.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software used for calculations. Include page numbers.
- M. Manufacturer's Instructions: Prepare written or published information that documents manufacturers recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer.
- N. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, and term of the coverage.

PART 3 EXECUTION

3.1 CONTRACTORS REVIEW

- A. Review each submittal, check for compliance with the Contract Documents and note corrections and field dimensions prior to submitting to Engineer.

3.2 ENGINEERS ACTION

- A. Submittals: Engineer will review each submittal, make marks to indicate corrections or modifications required, and return it. Engineer will stamp each submittal item with an action stamp and will mark stamp appropriately to indicate action taken.
- B. Submittals not required by the Contract Documents will not be reviewed and may be discarded.

END OF SECTION 01 33 00

SECTION 01 40 00

QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. This Section includes administrative and procedural requirements for quality assurance and quality control.
 - 2. Secure and pay costs of licenses and permits required by City, County and/or State authorities.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 DEFINITIONS

- A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction comply with requirements. Services do not include contract enforcement activities performed by Engineer.
- C. Authority Having Jurisdiction: AHJ

1.4 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

1.5 SUBMITTALS

- A. Permit: Provide copy of construction permits along with required licenses or certifications required by the AHJ.

1.6 QUALITY ASSURANCE

- A. Perform quality assurance in accordance with governing Codes, referenced standards, established standards, or industry standards.

- B. Solely responsible for supervising and directing the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise necessary to perform the Work in accordance with the Contract. Solely responsible for the means, methods, techniques, sequences and procedures of construction and for coordinating portions of the Work under the Contract, except where otherwise specified in the Contract Documents. Solely responsible to the Owner that the finished Work complies with the Contract Documents.
- C. It is the intent under this contract that workmanship be of the best quality consistent with the materials and construction methods specified. The presence or absence of the Owner's or Engineer's representative in no way relieves the Contractor of his responsibility to furnish materials and construction in compliance with the drawings and specifications. The Owner and Engineer have the authority to judge the quality and require replacement of unacceptable work or personnel.
- D. Cooperate in the execution of work and plan work in such manners as to avoid conflicting schedules or delay of work. If the work depends upon the work of another Contractor, report defects affecting the work to the Engineer. Commencement of work where such condition exists constitute acceptance of the other Contractor's work as being satisfactory to receive the work commenced. Coordinate work of trades under this contract in such a manner to obtain the best possible workmanship for the project. Install components of the work in accordance with the best practices of the particular trade. Notify the Owner sufficiently in advance of operations to allow for assignment of personnel.
- E. Solely responsible for health and safety precautions and programs for workers and others in connection with the Work. No inspection by, knowledge on the part of, or acquiescence by the Engineer, the Owner, the Owner's employees and agents, or other entity whatever relieves the Contractor from its sole responsibility for compliance with the requirements of the Contract or its sole responsibility for health and safety programs and precautions.
- F. Materials or methods described by words which, when applied, have a well-known technical or trade meaning are held to refer to such recognized standard. Standard specifications or manufacturer's literature, when referenced, are of the latest revision or printing unless otherwise stated, and are intended to establish the minimum requirements acceptable.
- G. When special makes or grades of material which are normally packaged by the supplier or manufacturer are specified or accepted, deliver materials to the site in original packages or containers with seals unbroken and labels intact and do not open until reviewed and accepted by the Engineer. Notify the Engineer prior to such material's delivery.
- H. Provide new materials unless otherwise indicated.
- I. Provide workmanship in accordance with the best modern practice.
- J. Verify dimensions and conditions at the site prior to starting work and notify the Engineer immediately of any errors or inconsistencies.
- K. Maintain one set of the contract documents and accepted submittals at the job site.
- L. Correct deficiencies identified by Engineer and non-conforming work within 24 hours of receipt of notification, either verbally or written, and submit a plan of action for addressing the deficiencies and non-conforming work. Do not proceed with further tear-off or commencement of other work until deficiencies and non-conforming work are properly addressed.
- M. Control of Installation

1. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
2. Comply with manufacturers' instructions, including each step in the sequence
3. Request clarification from Engineer before proceeding in the event manufacturers' instructions conflict with Contract Documents.
4. Comply with specified standards as the minimum quality for the Work, except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
5. Only allow Work performed by person qualified to produce workmanship of specified quality.
6. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

N. Tolerances:

1. Monitor tolerance control of installed products to produce acceptable work. Do not permit tolerances to accumulate.
2. Comply with manufacturers' tolerances. Request clarification from Engineer in the event manufacturers' tolerances conflict with Contract Documents.
3. Adjust products to appropriate dimensions; position before securing products in place.

O. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

1. Maintain applicable federal, state and municipal licenses.
2. Be certified in writing for a minimum of 2 years by the material manufacturer to install the primary specified products.
3. Have a minimum of 5 years' experience in installing the same or similar materials specified under the same firm name as that submitting the bid. If requested, submit a copy of firm's Articles of Incorporation to verify years in business. Crew workers on site are experienced and have a working knowledge of the system being installed.
4. Principals of the firm to have a minimum of 10 years' experience in the estimating, supervision, management and administration of a contracting firm engaged in work similar to work as specified.
5. Licensed by state work is occurring in for the type and dollar amount of work contemplated by these Contract Documents.
6. Never filed bankruptcy or filed for protection from creditors.

7. During the construction and completion of work covered by these Specifications, if the conduct of workers of the various crafts is determined unsuitable or a nuisance to the Owner or Engineer, or if the workman is considered incompetent or detrimental to the work, order such party removed from the grounds with the person not returning during the course of work on the project.
 8. Superintendent: During the performance of work by the Contractor or subcontractors, provide an on site and full time superintendent/representative meeting the following requirements:
 - a. For the purpose of these Specifications the designation "superintendent" is hereby defined as the individual present on the job site while work is being performed, and whose primary responsibility is to supervise and direct the performance of the Work.
 - b. Be in attendance at the project site during the progress of the work and duties as superintendent limited to this project only. Supervise and instruct workmen without engaging in the work process. If superintendent is absent temporarily from the project, designate a competent foreman to assume duties. During the superintendent's absence, foreman cannot engage in the work process; supervise and instruct only. Likewise, communications given to the foreman are binding as if given to the Contractor.
 - c. Communicate matters pertaining to the Work with the Owner and Engineer. Do not make decisions regarding changes in the Work without the Owner and Engineer's knowledge.
 - d. Decision making authority and ability.
 - e. Able to demonstrate knowledge of work being installed.
 - f. Fluent in the English language (reading, writing and speaking).
 - g. In possession of mobile telephone.
 - h. Employed by the Contractor at least six months prior to project commencement.
 - i. Owner approval and Engineer acceptance.
 - j. Once approved, do not change the superintendent except with the consent of the Owner unless he proves unsatisfactory to the Owner or Contractor or is no longer employed.
 - k. Minimum of five 5 years continuous experience as a job superintendent.
 9. No later than ten days prior to the pre-construction conference, provide the Owner, in writing, the names of the proposed project manager, superintendent, and foreman for approval. If he so determines, the Owner, without giving cause, may request an additional name, or names, be submitted for approval. The Owner will notify the Contractor of his acceptance at least 48 hours prior to the pre-construction conference.
- P. Specialists: Certain sections of the Specifications require that specific construction activities be performed by entities who are recognized experts in those operations. Specialists satisfy qualification requirements indicated and be engaged for the activities indicated.

- Q. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- R. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.7 QUALITY CONTROL

- A. The authorized representatives and agents of Owner permitted to inspect work, materials, payrolls, records of personnel, invoices of materials, and other relevant data and records.
- B. Owner Responsibilities:
 - 1. Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
 - a. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
 - b. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.
- C. Contractor Responsibilities:
 - 1. Repair and protection of work and materials.
 - 2. Replace work or materials not conforming with requirements of the Specifications or damaged during the progress of the work before completion and acceptance of the project.
 - 3. Coordinate documents with manufacturer and perform such testing, reporting, and communication incidental to provisions of the warranty procedures.
 - 4. Inclement Weather
 - a. In the event of temporary suspension of work during inclement weather, or whenever the Engineer recommends, protect carefully its work and materials against damage or injury from weather. If work or materials have been damaged by reason of failure to protect the work, replace such materials.
 - b. During inclement weather and temporary suspension of work, inspect the facility no later than 9:00 AM each day for leaks and perform temporary repairs if necessary. Make inspections daily during extended periods of inclement weather. Upon arrival at the facility, inform the Owner of his presence and purpose.

- c. If inspection of the facility does not occur by 9:00 AM on days of inclement weather and there is one or more leaks attributable to the Work, at 9:15 AM the Owner can exercise his right to contact an outside contractor to perform temporary repairs as necessary to prevent damage to the building, its contents and to minimize disruption. Reimburse the outside contractor an equitable amount as determined solely by the outside contractor. If the Contractor arrives at the project site after the outside contractor has been contacted, but before temporary repairs are made, reimburse the amount contractor the fixed amount of \$500.00, each occasion, for mobilization and/or travel expenses.
 - d. In the event inclement weather occurs after normal business hours, Saturday, Sunday or holidays, make arrangements with the Owner to provide access to the building to inspect for leaks. Compensate Owner for providing personnel for the service on an hourly rate basis as determined solely by the Owner.
- D. Manufacturer's Field Services: During construction, roof manufacturer to perform quality assurance site visits monthly by manufacturer's technical representative to ensure materials are being properly installed and as required to obtain the specified warranty. Sealant manufacturer to perform quality assurance site visits as required to obtain the specified warranty.
 - 1. The first site visit performed within the first three (3) days of operations.
 - 2. Coordinate site visits with Engineer. Submit reports of findings within one week of inspection. Payment applications will be rejected until applicable reports are received.
 - a. If required by manufacturer, Contractor shall request REI Engineers be added to the report distribution list.
 - 3. Inspections to be performed by an employee of the selected manufacturer that is assigned full time to their technical services department. Sales personnel are not acceptable for this function and may result in rejection of the work installed that does not fulfill this requirement.
 - 4. Manufacturer's final inspections performed only with REI personnel in attendance. A minimum of seven days' written notice is required. Manufacturer's final inspection conducted without REI personnel in attendance will be repeated at no additional cost to the Owner.
 - 5. Violation of these requirements results in the removal of that manufacturer for a period of not less than one year from the Engineer's accepted materials list.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 REPAIR AND PROTECTION

- A. On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
- B. Protect construction exposed by or for quality control service activities.

- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality control services.

END OF SECTION 01 40 00

SECTION 01 42 00

REFERENCE STANDARDS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Requirements relating to referenced standards.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 REFERENCE STANDARDS

- A. Reference standards are specified in Part 1 of the applicable specification section.
- B. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- C. Comply with the reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- D. Should specified reference standards conflict with Contract Documents, request clarification from the Engineer before proceeding.
- E. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered by Contract Documents by mention or inference otherwise in any reference document.

1.4 BUILDING CODE

- A. Comply with the building code and energy conservation code/standard in effect in South Carolina and current on date of Contract Documents.
 - 1. 2021 South Carolina Building Code
 - 2. 2009 International Energy Conservation Code

END OF SECTION 01 42 00

SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 REFERENCE STANDARDS

- A. NFPA 10 - Standard for Portable Fire Extinguishers; 2022.
- B. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2022, with Errata (2021).

1.4 USE CHARGES

A. Include in Contract, cost or use charges for temporary facilities which are not chargeable to Owner. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, occupants of testing and inspecting agencies and personnel of authorities having jurisdiction.

1.5 QUALITY ASSURANCE

- A. Comply with ANSI A10.6, NECA's "Temporary Electrical Facilities," and NFPA 241 .
- B. Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70 .
- C. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- D. Develop and supervise an overall fire-prevention and first-aid fire-protection program for personnel at Project site. Review needs with local fire department and establish procedures. Instruct personnel in methods and procedures. Post warnings and information.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General: Provide new materials or utilize undamaged, previously used materials in serviceable condition if accepted by Engineer. Provide materials suitable for use intended.
- B. Fencing:
 - 1. Safety Fence: Safety orange high density polyethylene fabric with a minimum of 4 feet in height, 15 lbs. per 100 linear feet. Painted steel fence posts with ground anchors and metal tabs stationed often enough to hold the fabric at a minimum height of 3 feet 8 inches tall.
- C. Tarpaulins: Fire-resistive labeled with flame-spread rating of 15 or less.
- D. Water: Potable.
- E. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material with a self-contained or standalone exterior handwashing station.
- F. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110 to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
- G. Fire Extinguishers: Hand carried, portable, UL rated. Provide class and extinguishing agent as indicated or a combination of extinguishers of NFPA-recommended classes for exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure and the requirements of the local Governing agency.
- H. Ground Protection Mats: 4 foot by 8 foot, HDPE infused with rubber for traction mats designed to protect landscaping from construction equipment.

PART 3 EXECUTION

3.1 TEMPORARY UTILITIES

- A. Water Service: Water for construction purposes is available from the Owner at no charge. Operate exterior hose bids only with properly fitted handles. Remove at the end of each workday. Repair damage to hose bids or hose bib stems. Do not operate hose bibs with pliers.
- B. Electrical Power Service: Provide portable generators for electrical power requirements.
 - 1. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths do not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

3.2 CONSTRUCTION FACILITIES

- A. Temporary construction facilities include the following:
 - 1. Field Office: prefabricated, mobile units or job-built construction with lockable entrances and serviceable finishes including lights and utilities.

2. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities. Located facilities at sites approved by Owner. Access inside the facility is not available.
 - a. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
 - b. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy.
 - c. Wash Facilities: Provide adequate hand washing stations.
 - d. Drinking-Water Facilities: Provide bottled-water, drinking-water units.
3. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations at a location approved by the Owner. Containerize and clearly label hazardous, dangerous, or unsanitary waste materials separately from other waste. Use of Owner's waste disposal facilities is not acceptable.
 - a. If required by authorities having jurisdiction, provide separate containers, clearly labeled, for each type of waste material.

3.3 TEMPORARY BARRIERS, ENCLOSURES AND CONTROLS

- A. Provide temporary barriers and enclosures for protection from exposure, foul weather, construction operations and other activities. Protect buildings and grounds from damages during construction.
- B. Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and public of possible hazard. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- C. Provide security controls to protect work and materials at the project site.
- D. Provide fencing to enclose the materials storage and staging area.
- E. Protection of adjacent roof areas: Provide protection to adjacent roof systems in the form of 3/4 inch CDX plywood over 1.5 inch rigid insulation with warning flags on both sides. Limit foot and equipment traffic to protected walkways.
- F. Provide and maintain suitable temporary sidewalks, closed passageways, fences, or other structures required by law so as not to obstruct or interfere with traffic in public streets, alley ways, or private right-of-way. Leave an unobstructed way along public and private places for pedestrians and vehicles.
- G. Provide walks over and around all obstructions in public places. Maintain sufficient light and guards to protect persons from injury.
- H. Provide emergency egress from existing occupied areas at all times as required by AHJ. Maintain egress path in compliance with requirements of the applicable building code.

3.4 PROTECTION FACILITIES INSTALLATION

- A. Provide environmental protection by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Provide storm water controls sufficient to prevent flooding from heavy rain.
- C. Protection of materials stored on site.
 - 1. Material storage will be designated by the Owner at the Pre-Construction Meeting.
 - 2. Protect materials stored on the job site from theft and weather related damage.
 - 3. Store as much material in locked trailers as practicable.
 - 4. Place no more material on the job site than is necessary to maintain the work schedule.
 - 5. Do not deliver materials prior than 7 days earlier then work commencing.

3.5 TREE AND PLANT PROTECTION:

- A. Contractors are hereby reminded and cautioned that care shall be exercised to protect trees and plants which are to remain during the progress of the Project. Suitable barriers shall be provided around all trees and plants that are to remain and which are in the construction area and product handling area. All damage to such trees and plants shall be repaired; broken limbs properly and neatly pruned and painted with pruning paint; all trunk damage neatly dressed and painted with pruning paint. Any trees and plants which are excessively damaged shall be replaced in like, kind, size, and species by The Contractor at no additional cost. All work shall be by a recognized and approved nursery.
 - 1. All grading around trees and plants to remain shall be such that the root system shall not be disturbed. Earth shall not be temporarily piled around trees and plants, nor shall earth be graded to the trees and plants above the natural root depth for that particular species.
 - 2. Established trees and plants, which are in the way of construction and which are in the material handling areas, shall be removed and stored for future replanting. The services of a recognized and approved nursery shall be employed to remove the trees and plants and prepare them for storage. Removed trees and plants shall be properly balled and burlapped in accordance with their size. During the time of storage, they shall be properly watered and cared for in accordance with the instructions from the nursery. After the construction work is completed, the stored trees and plants shall be replanted, and those trees and plants not replanted shall be disposed of as directed by the Owner.

3.6 CRANES, HOISTS AND LIFTING

- A. Where cranes and other lifting equipment are required, develop and maintain a plan to execute the work in a safe manner including the following items at a minimum:
 - 1. Erection, climbing and dismantling process
 - 2. Inspection process for equipment and rigging

3. Exclusion zones
 4. Maintenance processes
 5. Identification of Qualified/Competent persons
 6. Lifting plan
 7. Process for identifying and working around aerial hazards
 8. Signalmen communication
 9. Working around energized lines
 10. Ground conditions and underground hazards
- B. Ensure that cranes and lifting equipment are certified for use by a Qualified/Competent person prior to first use and annually (at a minimum).
 - C. Ensure that cranes and lifting equipment are inspected as required by a third party Qualified/Competent person.
 - D. Provide ground protection mats over landscaped areas beneath lifts.
 - E. Do not operate or travel lifts over curbs or sidewalks. Where necessary to travel equipment over curbs or sidewalks, provide adequate protection to prevent damage.

3.7 PROJECT SIGNAGE

- A. Provide temporary signs to provide information to building occupants directing them away from construction operations.
- B. Provide signage inside adjacent buildings alerting occupants of the Work Area.

3.8 VEHICULAR ACCESS AND PARKING

- A. Parking for vehicles available only in the approved Set-up and Staging area. No other vehicle parking on site is allowed.
- B. Owner Personnel vehicles will be removed from the construction area prior to the start of construction.

3.9 TRAFFIC CONTROLS

- A. Obtain and erect street/parking lot signage as necessary to divert traffic away from staging areas, work area, etc. Coordinate signage requirements with the Owner and Engineer.
- B. Provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.

END OF SECTION 01 50 00

SECTION 01 73 29

CUTTING AND PATCHING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. This Section includes procedural requirements for cutting and patching.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

- A. Engineer's Acceptance: Obtain acceptance of cutting and patching before cutting and patching. Acceptance does not waive right to later require replacement of unsatisfactory work.
- B. Structural Elements: Do not cut and patch structural elements in a manner that changes their load-carrying capacity or load-deflection ratio. Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations sealed by a licensed Engineer in the state of the project showing integration of reinforcement with original structure.
- C. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.
- D. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that, in the Engineer's opinion, reduces the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

- F. Cutting and Patching Conference: If extensive cutting and patching is required, before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.5 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, match the visual and functional performance of existing materials.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces and conditions under which cutting and patching are performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Services: Where existing services are removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete or Masonry: Cut using an abrasive saw or a diamond-core drill.
 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 5. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that eliminate evidence of patching and refinishing.
 3. Floors and Walls: Where walls or partitions that are removed extend from one finished area into another, patch and repair floor and wall surfaces. Provide an even surface of uniform finish, color, texture, and appearance. Replace floor and wall coverings, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over unbroken surface containing the patch to the nearest joint or delineation between materials. Provide additional coats until patch blends with adjacent surfaces.
 4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition.
 5. Ceilings: Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- D. Renovation Project Procedures
1. Materials: As specified in technical sections, match existing products and Work.
 2. Employ skilled and experienced installer to perform cutting and patching.
 3. Remove, cut and patch materials in a manner to minimize damage and to provide a means of restoring products and finishes to original condition.

4. Refinish existing visible surfaces to remain in renovated rooms and spaces, to renewed condition for each material, with a neat transition to adjacent finishes.
 5. Where work abuts or aligns with existing construction, provide a smooth and even transition. Patch work to match existing adjacent work in texture and appearance.
 6. When a smooth transition with Work is not possible, submit recommendation to Engineer for review. Terminate existing surface along a straight line at a natural line of division when possible.
 7. Patch or replace portions of surfaces, which are damaged, lifted, discolored or showing other imperfections.
 8. Finish surfaces as specified in individual Product sessions.
 9. Cutting and patching completed in a manner such that the patched surfaces are compatible with the surfaces in which the repairs were made, both structurally and aesthetically as deemed appropriate by the Project Engineer.
- E. Restoration: Restore existing work, including concealed work not indicated or specified to be modified, and which is damaged or otherwise affected by construction operations, to a condition which existed before the work was commenced. Use workers skilled in reconstruction and alteration work where construction adjoins, connects to, or abuts existing work. Join Work in such a manner as to make the joining as inconspicuous as possible. Obvious patching of damaged Work is not acceptable. At the completion, ensure that the buildings and grounds are in first-class condition within the intent of these specifications, with parts well joined as required, connections completed, and facilities in working condition.

3.4 CLEANING

- A. Clean areas and spaces where cutting and patching is performed where required for construction or used as access.
- B. Remove paint, mortar, oils, putty and similar materials.
- C. Leave work in an acceptable completed condition.

END OF SECTION 01 73 29

SECTION 01 77 00
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - a. Inspection Procedures.
 - b. Project Record Documents.
 - c. Warranties.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Specification Sections apply to this Section.

1.3 REFERENCE STANDARDS

1.4 SUBMITTALS

- A. Warranties: Submit copy of warranties to meet the requirements of their respective specification section.

1.5 SUBSTANTIAL COMPLETION

- A. Submit written certification to the Engineer that the Project is substantially complete along with the following:
 - 1. Prepare a list of items to be completed and corrected (Contractor's punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Notify Owner of pending insurance changeover requirements.
 - 3. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 - 5. Notify Owner of changeover in heat and other utilities.
 - 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 - 7. Complete final cleaning requirements, including touchup painting.

8. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Substantial Completion Inspection: On receipt of written substantial completion certification, the Engineer will make a substantial completion inspection within 7 days after receipt of certification.
1. Should the Engineer consider the Work not substantially complete, he will notify the Contractor, in writing, stating the reasons. Complete the Work and send a second written notice to the Engineer, certifying the Project is substantially complete, at which time the Engineer will re-inspect the work.
 2. Should the Engineer consider the Work substantially complete, he will prepare and issue a Certificate of Substantial Completion accompanied by the list of items to be completed or corrected (Punch List).
 3. A punch list of items will be prepared for correction and completion before the Final Inspection. Complete the punch list items within 15 days of the punch list inspection. If the Contractor fails to complete the punch list within this period, the Owner has the right to impose liquidated damages in the amount of \$300.00 for each consecutive day until the items are completed.

1.6 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01.
 2. Submit signed copy of Engineer's inspection list of items to be completed or corrected (punch list) certifying each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Final Inspection: The submission of the signed punch list constitutes as written request for final inspection for acceptance. On receipt of request, Engineer along with the Owner's Representative will conduct a final inspection within 7 days of receipt of certification.
1. Should the Engineer consider that the Work is finally complete in accordance with requirements of the Contract Documents, Project Closeout Submittals will be requested.
 2. Should the Engineer consider that the Work is not finally complete, notification to the Contractor, in writing, stating the reasons will be made.
 3. Take steps to remedy the stated deficiencies and send a second written notice to the Engineer certifying that the Work is complete, at which time the Engineer will re-inspect the Work.

1.7 PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Engineer's reference during normal working hours.
 - 1. Submit required record documents and warranties within 30 days of the punch list inspection. If the Contractor fails to properly submit required items within this period, the Owner has the right to impose liquidated damages in the amount of \$300.00 for each consecutive day until the items are properly submitted.
- B. Record Drawings: Maintain and submit one set of blue- or black-line white prints of Contract Drawings and Shop Drawings.
 - 1. Mark Record Prints to show where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - b. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 - 3. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
 - 4. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Note related Change Orders and Record Drawings, where applicable.
- D. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
 - 1. Completed and signed Engineer's Punch List
 - 2. Copy of Manufacturer's Final Inspection Report

3. Landfill Charge Tickets

1.8 WARRANTIES

- A. Warranties to commence on the date of Substantial Completion of the project.
- B. Metal Roof Panel System weathertight and finish warranty as outlined in Section 07 41 13 - Metal Roof Panels.
- C. Metal Wall Panel finish warranty as outlined in Section 07 42 13 - Metal Wall Panels.
- D. Thermoplastic Single Ply Roofing System warranty as outlined in Section 07 54 00 - Thermoplastic Single Ply Roofing.
- E. Pre-finished Sheet Metal finish warranty as outlined in Section 07 62 00 - Sheet Metal Flashing and Trim.
- F. Contractor's Warranty - utilize form contained in Section 00 65 36.
- G. Asbestos Free Warranty - utilize form contained in Section 00 65 37.

END OF SECTION 01 77 00

SECTION 05 01 30

STEEL ROOF DECK REPAIR AND SECUREMENT

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Steel Deck Repair: Inspect, evaluate and remediate steel roof deck as follows:
 - a. Repair of surface rust in steel decking.
 - b. Repair of through holes in steel decking.
 - c. Overlay of damaged or deteriorated steel decking.
 - d. Replacement of damaged or deteriorated steel decking.
 - 2. Steel Deck Securement: Provide mechanical fasteners to secure steel deck to existing steel framing and to secure existing deck side and end laps.

1.2 RELATED REQUIREMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections apply to this Section:
 - 1. Section 06 10 00 - Rough Carpentry
 - 2. Section 07 01 50 - Preparation for Reroofing
 - 3. Section 07 22 16 - Roof Insulation
 - 4. Section 07 41 13 - Metal Roof Panels
 - 5. Section 07 54 00 - Thermoplastic Single Ply Roofing
 - 6. Section 22 14 26 - Roof Drains

1.3 REFERENCE STANDARDS

- A. AISC (MAN) - Steel Construction Manual; 2023, with Errata (2025).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2023.
- C. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components; 2016, with Editorial Revision (2022).
- D. SDI (DM) - Publication No.30, Design Manual for Composite Decks, Form Decks, and Roof Decks; 2007.

- E. SDI QA/QC - Standard for Quality Control and Quality Assurance for Installation of Steel Deck; 2022.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.
- B. Manufacturer's Instructions: Latest edition of the Manufacturer's current material specifications and installation instructions.

1.5 QUALITY ASSURANCE

- A. Provide meticulous attention to the detail of installation and workmanship to ensure the assemblage of products in the highest grade of excellence by skilled craftsmen of the trade.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Steel Deck Repair:
 - 1. Steel Deck: FM Approved or UL listed, 22 gauge minimum; galvanized steel meeting ASTM A653/A653M with profile to conform to existing deck profile at end and side laps.
 - 2. Deck Repair Plates: 16 gauge, galvanized steel plates meeting ASTM A653/A653M sized to extend a min. 8 inches beyond the through hole in existing decking with plate edges resting on a rib.
 - 3. Deck Repair Coating: High solids, low VOC, self-priming epoxy coating for use on steel structures.
 - a. PPG Amerlock 400
 - b. Devoe Bar-Rust 231
 - c. Kryon Industrial High Build Epoxy Mastic 100
 - d. Benjamin Moore & Co. Surface Tolerant Epoxy Mastic Coating V160
- B. Steel Deck Securement:
 - 1. Deck-to-structural steel fasteners: FM Approved, self-drilling deck fasteners of length and type as required by fastener manufacturer for thickness of structural steel.
 - a. ITW Buildex Corp. 12-24 Tek 5
 - b. SFS Intec Impax 12-24 SD5
 - c. Blazer 1/4-20 DP5
 - 2. Deck-to-deck side lap fasteners: FM Approved self-drilling deck side lap fasteners of length and type as required by fastener manufacturer for thickness of steel deck.
 - a. ITW Buildex Corp. 10-16 Tek 3

- b. SFS Intec #10-16 SD3
 - c. Blazer #10-16 DP3
3. Washers: 3/4 inch diameter of same material as fastener or integral 1/2 inch diameter washer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect roof deck in work areas noted on roof plan. Notify engineer of additional damaged decking, or damaged structural elements.
- B. Before removing decking, cutting decking or fastening decking, inspect interior conditions under the deck to prevent cutting or damaging the joists, electrical conduit, sprinkler piping, fixtures and utilities. Ensure conditions are satisfactory before proceeding with the work, and continuously monitor interior and exterior work conditions during demolition and construction operations.
- C. Commencement of work signifies acceptance of conditions. Correct defects in work resulting from accepted substrates at no additional expense to the Owner.
- D. The following descriptions indicate roof deck corrosion levels by degree. Inspect roof deck areas and assess corrosion level of 1 through 5. Following the assessment, conduct the appropriate Remediation Method in accordance with the deck corrosion level descriptions.
 - 1. Corrosion Degree 1
 - a. Red rust or dark brown rust scaling on top flange only.
 - b. Dark brown rust scale removed by scraping/wire brushing to indicate minor pitting of the metal surface.
 - c. Deck flutes discolored.
 - 2. Corrosion Degree 2
 - a. Red rust or dark brown rust scale present on the deck surface.
 - b. Deck sections (flanges and flutes) have been or can be readily removed during examination or areas of decking are missing, up to 13" in any one direction.
 - 3. Corrosion Degree 3
 - a. Red rust or dark brown rust scale present on the deck surface.
 - b. Deck sections (flanges and/or flutes) have been or can be readily removed during examination or areas of decking are missing, from 13" to 24" in one dimension.
 - 4. Corrosion Degree 4
 - a. Red rust or dark brown rust scale present on the deck surface.

- b. Deck sections (flanges and/or flutes) have been or can be readily removed during examination or areas of decking are missing, 24" or greater in one dimension.

3.2 PREPARATION

- A. Remove and vacuum debris from deck surface and ribs to allow for inspection of deck, and to fasten decking.
- B. Remove and properly dispose of damaged decking (Corrosion Degree Level 4) and remove deck fasteners in the repair area.
- C. Take necessary precautions to prevent debris from entering building space, and coordinate operations with Engineer and Owner.
- D. Provide temporary protection of building interior and contents to prevent damage.

3.3 STEEL DECK REMEDIATION

- A. General:
 - 1. Remove loose dirt, rust, moisture, grease or other contaminants from the surface with a power wire brush.
 - 2. Vacuum the roof deck surface clean.
- B. Corrosion Degree 1:
 - 1. Properly mix deck repair coating according to manufacturer's recommendations.
 - 2. Do not mix more material than can be used in the materials expected pot life.
 - 3. Apply material at temperatures from 50° F to 90° F for optimum application.
 - 4. Brush or roller apply deck repair coating as recommended by manufacturer.
 - 5. Allow coating to dry a minimum of 30 minutes. Do not install roof insulation until coating is dry.
- C. Corrosion Degree 2:
 - 1. Properly mix deck repair coating according to manufacturer's recommendations.
 - 2. Do not mix more material than can be used in the materials expected pot life.
 - 3. Apply material at temperatures from 50° F to 90° F for optimum application.
 - 4. Brush or roller apply deck repair coating as recommended by manufacturer.
 - 5. Mechanically attach deck repair plate to deck ribs with deck to side lap fasteners 6 inches on center maximum or a minimum of 2 screws per side.
- D. Corrosion Degree 3:
 - 1. Properly mix deck repair coating according to manufacturer's recommendations.
 - 2. Do not mix more material than can be used in the materials expected pot life.

3. Apply material at temperatures from 50° F to 90° F for optimum application.
 4. Brush or roller apply deck repair coating as recommended by manufacturer.
 5. Allow coating to dry a minimum of 30 minutes. Do not install roof insulation until coating is dry.
 6. Overlay steel deck to match existing profile extending a minimum of 6 inches beyond the deficient area.
 7. Mechanically attach perimeter of overlay deck to existing deck ribs with deck to side lap fasteners 6 inches on center.
 - a. Where structural support is present, secure overlay deck to structural framing in accordance with the steel deck securement pattern.
 - b. Apply weight over the area being fastened to prevent deck deflection and ensure contact between fasteners, deck and/or structural steel.
 - c. Follow deck Manufacturer's instructions and SDI QA/QC .
- E. Corrosion Degree 4:
1. Examine underside of steel deck for conduit located directly below the deck surface, anything suspended or fastened to the deck surface, etc. If necessary, detach objects from the bottom side of the deck being removed.
 2. Remove deck meeting Corrosion Degree 4.
 3. Provide roof deck where existing is removed.
 4. Overlay deck end laps no less than 6 inches and as required to secure through both panels and into the structural steel. Lap ends only over structural framing. Deck fasteners to penetrate deck panels no less than 2 inches from the edge of the panel.
 5. Overlay deck side laps to nest flush into neighboring deck panel. Install a minimum of two deck side lap fasteners between framing members.
 6. Apply weight over the area being fastened to prevent deck deflection and ensure contact between fasteners, deck and/or structural steel.
 7. Follow deck Manufacturer's instructions and SDI QA/QC .

3.4 STEEL DECK SECUREMENT

- A. Fasten steel deck panels to steel framing and steel deck side laps as indicated in the contract drawings and to meet the requirements of SDI (DM), AISC (MAN), and FM DS 1-29.
- B. Drive deck fasteners in the center of the bottom of the deck rib. Drive the fasteners within +/-1/4 inch of the center of the structural steel bearing surface. Drive fasteners along the center of the structural steel member, not near the edge of the structural steel.
- C. Drive deck side lap fasteners into the deck rib such that both panels are penetrated. Locate the side lap fasteners along the center of the bottom of the rib.

- D. Utilize fastener with integral washer or provide washer for fasteners in Zone 2 (perimeter) and Zone 3 (corner).
- E. Apply weight over the area being fastened to prevent deck deflection and ensure contact between fasteners, deck and/or structural steel.

3.5 FIELD QUALITY CONTROL

- A. Monitor the inside of the building during removal and replacement of damaged steel decking to prevent damage to building, equipment and occupancy.
- B. Monitor hot work operations in strict accordance with the Owners requirements and local Code. These operations include, but are not limited to, cutting, welding, soldering, brazing, grinding, etc. and other spark or flame producing operations.

END OF SECTION 05 01 30

SECTION 06 10 00
ROUGH CARPENTRY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Rough Carpentry work required to facilitate installation of roof assembly including:
 - a. Provide pressure treated rough carpentry.
 - b. Resecure rough carpentry to remain in place.
 - c. Replace damaged, rotted or deteriorated rough carpentry with pressure treated rough carpentry.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections apply to this Section:
 - 1. Section 05 01 30 - Steel Roof Deck Repair and Securement
 - 2. Section 07 01 50 - Preparation for Reroofing
 - 3. Section 07 22 16 - Roof Insulation
 - 4. Section 07 41 13 - Metal Roof Panels
 - 5. Section 07 54 00 - Thermoplastic Single Ply Roofing
 - 6. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2023.
- B. ASTM F1667/F1667M - Standard Specification for Driven Fasteners: Nails, Spikes, and Staples; 2021a.
- C. AWPA U1 - Use Category System: User Specification for Treated Wood; 2024.
- D. FM DS 1-49 - Perimeter Flashing; October 2021.
- E. PS 1 - Structural Plywood; 2023.
- F. PS 20 - American Softwood Lumber Standard; 2021.

1.4 DEFINITIONS

- A. Rough Carpentry includes carpentry work not specified as part of other Sections and generally not exposed.
- B. KDAT: Kiln Dried After Treatment.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.

1.6 QUALITY ASSURANCE

- A. Inspect wood for damage, warping, splits, and moisture content as defined by the applicable wood products industry standards. Reject materials that do not comply.
- B. Rough carpentry to present a smooth, consistent substrate for roof system and flashing installation.
- C. Qualifications of workers: Provide sufficient, competent and skilled carpenters in accordance with accepted practices and supervisors present during execution of the work. Be thoroughly familiar with type of construction involved and related work and techniques specified.
- D. Moisture Content:
 - 1. Kiln Dry After Treatment (KDAT).
 - 2. Do not store or install treated lumber used in the roofing assembly in a manner exposing it to rain.
 - 3. Lumber: 19% or less before being covered/enclosed into roofing assembly.
 - 4. Plywood: 18% or less before being covered/enclosed into roofing assembly.
- E. Label: Bear the stamp of the AWP Quality Mark, indicating compliance with the requirements of the AWP Quality Control Program.
- F. Installation of rough carpentry for roofing and flashing terminations to ensure plumb, uniform and level metal flashings.
- G. Install rough carpentry to ensure roof membrane flashing transitions are smooth for positive roof drainage and appearance.
- H. Installation of fasteners and associated materials to secure rough carpentry as detailed and specified.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Store a minimum of four inches above ground on framework or blocking. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks. Cover with protective waterproof covering providing for adequate air circulation and ventilation

- B. Avoid exposure to precipitation during shipping, storage or installation. If material does become wet, replace or permit to dry prior to covering or enclosure by other roofing, sheet metal or other construction materials (except for protection during construction).
- C. Upon delivery to job site, place materials in area protected from weather.
- D. Do not store seasoned materials in wet or damp portions of building.
- E. Protect sheet materials from corners breaking and damaging surfaces, while unloading.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Wood Nailers/Blocking:
 - 1. No. 2 or better spruce or southern yellow pine lumber meeting PS 20 standards.
 - 2. Sound, thoroughly seasoned, dressed to nominal finish dimension, and free of warpage, cupping, and bowing.
 - 3. Dimensions determined by job conditions or as indicated in detail drawings.
- B. Plywood:
 - 1. APA PS 1 Rated Sheathing, 32/16, Exposure 1, Grade C, thickness to match existing or as indicated in Contract Drawings.
- C. Preservative Treatment:
 - 1. ACQ as manufactured for Viance in accordance with AWWA U1 and P5, P26, P27, P28, P29 as appropriate. Use 0.15 lb/cu ft of ACQ in accordance with AWWA U1, Use Category UC3B.
 - 2. Ecolife or EL2 as manufactured by Viance. Use 0.019 lb/cu ft of Ecolife or EL2 (+ 0.2 lb/cu ft MCS) in accordance with AWWA U1, Use Category UC3B.
 - 3. Micro-Guard as manufactured by Hoover Treated Wood Products, Inc. in accordance with AWWA U1, Use Category UC3B.
 - 4. Engineers accepted equivalent.

2.2 FASTENERS

- A. General:
 - 1. Stainless steel or as accepted by Engineer.
 - 2. Fasteners securing pressure treated lumber manufactured for corrosion resistance and exposures associated with pressure treated wood applications.
 - 3. Do not use nails at roof edges to fasten rough carpentry, lumber, plywood, etc. Use screws, anchors, and/or machine bolts to secure rough carpentry at roof perimeter edges.

4. Do not use masonry screws, spikes, and drive-pins to fasten edge/perimeter nailers to concrete. Utilize minimum 1/2-inch diameter anchors or bolts to secure roof edge nailers to concrete.
 5. Do not secure or fasten edge/perimeter wood nailers to hollow core concrete masonry; grout concrete masonry units and provide minimum embedment of fasteners to meet anchor manufacturer's installation instructions.
 6. Do not secure edge/perimeter wood nailers to brick masonry as the primary securement method.
- B. Nails: 8d (0.135 inch shank diameter), 10d (0.148 inch shank diameter) or 16d (0.162 inch shank diameter), type 316 stainless steel, ring shank nails. meeting ASTM F1667/F1667M. Length to embed into base substrate a minimum 1-1/2 inches.
1. Maze Nails
 2. Anchor Staple and Nail
 3. Simpson Strong Tie
 4. Manasquan Premium Fasteners
 5. Engineers accepted equivalent.
- C. Screws: No. 10 or greater, stainless steel wood screws with flat head, or insulation screws. Length to embed into base substrate a minimum of 1-1/2 inches.
- D. Self-Drilling Screws (for steel deck and light gauge steel framing, 16-ga. or less): #14-13 DP1, pancake or panhead, corrosion resistant, ASTM A153/A153M, FM Approved, self-drilling and self-tapping screw, length to provide minimum 3 pitches of thread through metal thicknesses or 3/4 inch through top flange of steel deck.
1. ITW Buildex Tek
 2. Triangle Fasteners
 3. SFS Intec
 4. Engineers accepted equivalent.
- E. Self-Drilling Screws (for structural steel, greater than 12-gauge): #12-24 DP5 (for steel thickness up to 1/2 inch) or DP4 (for steel thickness from 1/8 inch to 3/8 inch), flat or hex head, corrosion resistant, self-drilling/self-tapping fastener of length to provide minimum 3 pitches of thread through metal thicknesses.
1. ITW Buildex Tek
 2. SFS Intec
 3. Blazer
 4. Engineers accepted equivalent

- F. Concrete/Masonry Anchors: Sleeve-Type, or Wedge-Type, Expansion Anchor: Minimum 1/2-inch diameter, Type 304 or 316 Stainless Steel, Expansion Anchor Bolt Assembly of length as required to provide minimum embedment as required by fastener manufacturer based upon substrate being secured but not less than minimum 5-inch embedment into concrete walls or reinforced, grouted CMU walls and provide 1 inch embedment into structural concrete roof deck.
1. Lok/Bolt, Power Bolt or Power-Stud by Powers Fasteners
 2. Redi-Bolt, Dynabolt or Trubolt by Red Head Anchoring Systems
 3. Kwik Bolt by Hilti
 4. Engineers accepted equivalent.
- G. Masonry Screws: 1/4-inch minimum diameter, Type 410 stainless steel with flat head. Length to provide minimum 1 inch embedment into substrate.
1. Tapcon by ITW Buildex,
 2. KWIK-CON II by Hilti
 3. Powers Fasteners Tapper+
 4. Engineers accepted equivalent.
- H. Washers: Fasteners heads for screws, anchors and bolts terminating at the surface of nailers provided with a minimum 5/8-inch diameter, stainless steel or similar corrosion resistance flat washer provided by fastener manufacturer, unless washer is provided from factory as part of the fastener assembly.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect substrates to receive rough carpentry, and ensure substrates are in satisfactory condition prior to installation of rough carpentry.
- B. Inspect rough carpentry including fasteners for material condition before proceeding with installation. Replace deteriorated, rotted, damaged, split, warped, twisted or wet materials.
- C. Remove cants, tapered edge strips, debris, fasteners, etc. that interfere with the installation of rough carpentry.
- D. Notify Engineer in writing of unsatisfactory conditions.
- E. Commencement of work signifies acceptance of substrates. Correct defects in work resulting from accepted substrates at no additional expense to the Owner.

3.2 PREPARATION

- A. Steel/Metal Substrates:
 1. Coat steel and metal with a uniform, heavy application of asphalt primer, or separate by membrane or other acceptable means to prevent contact between steel/metal and treated wood products.

- B. Roof Deck and Structure:
1. Adjust substrates to receive rough carpentry to ensure completed rough carpentry installation is acceptable for roofing and sheet metal flashings.
 2. Coat steel decking with a uniform, heavy application of asphalt primer, or separate by membrane or other acceptable means to prevent contact between steel and treated wood products.
 - a. Do not allow treated lumber to make direct contact with steel decking.

3.3 INSTALLATION

- A. Replace damaged or deteriorated wood blocking, nailers, and curbs.
- B. Re-secure wood nailers at roof edges that are to remain with fastener type and spacing to comply with this section.
- C. Install wood blocking, nailers, and curbs to achieve a minimum 8-inch flashing height above the roof membrane.
- D. Install wood nailers at perimeter roof edges and low-profile expansion joints to match insulation height while maintaining a constant nailer height along perimeter edges.
- E. Install wood blocking and nailers concurrently with roof system installation. Removal of insulation and/or folding back of roof membrane to install wood blocking and nailers at a later date is not acceptable.
- F. Set rough carpentry to required levels and lines, with members plumb, true to line, material cut to fit, and braced to hold work in proper position. Use a belt sander to remove obtrusive surface irregularities. Drive nails and spikes home; and pull bolt nuts tight with heads and washers in close contact with the wood.
- G. Fit rough carpentry to other construction, scribe and cope for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction. Install joints between wood for a smooth transition.
- H. Attachment:
1. Consult the fastener manufacturer's published literature and follow the recommended requirements for pre-drilling, cleaning, placement and compatibility of substrates. Follow manufacturer's requirements for fasteners spacing, substrate preparation and substrate embedment where not specified.
 2. Securely attach rough carpentry work to substrate with fasteners anchored to resist the required upward and outward design wind loads.
 3. Meet the requirements herein and that of FM DS 1-49 for rough carpentry attachment.
 4. Install bolts flush with the top surface of nailers where possible to avoid countersinking. Bolt bottom nailers then fasten above nailers where possible. Countersink bolts, nuts and screws flush with wood surfaces only as detailed; countersink a maximum of one half the board thickness.
 5. Install fasteners without splitting wood. Pre-drill where necessary. Replace split or damaged wood to provide acceptable conditions.

6. For anchors, pre-drill concrete and masonry units to prevent damage or cracking of the masonry. Consult fastener manufacturer's published guides. Repair or replace damaged masonry with fasteners re-installed in an acceptable location.
7. Fastener spacing: Staggered in two rows $\frac{1}{3}$ the board width when board is wider than 6 inches and installed within 3 to 4 inches of each end.
 - a. Nails: Securing wood to wood spaced as indicated below with two nails installed within 3 to 4 inches of each end of nailer lengths to prevent wood from twisting at board joints. Do not utilize nails at roof edges, utilize screws.
 - 1) Perimeter (Zone 2) spacing of 12 inches maximum and Corner (Zone 3) spacing of 6 inches maximum.
 - b. Screws: Securing wood to wood spaced as indicated below with two screws installed within 3 to 4 inches of each end of nailer lengths to prevent wood from twisting at board joints.
 - 1) Perimeter (Zone 2) spacing of 12 inches maximum and Corner (Zone 3) spacing of 6 inches maximum.
 - c. Self-Drilling Screws: Securing wood to steel spaced as indicated below with one screw within 3 to 4 inches of each end of nailer lengths to prevent wood from twisting at board joints.
 - 1) Perimeter (Zone 2) spacing of 12 inches maximum and Corner (Zone 3) spacing of 6 inches maximum.
 - d. Epoxy Adhesive Anchors System: Spaced as indicated below, staggered and an additional fastener within 3 to 4 inches of each end of nailer to prevent boards from twisting at board joints.
 - 1) Perimeter (Zone 2) spacing 48 inches max and Corner (Zone 3) spacing 24 inches max.
 - e. Concrete/Masonry Anchors: Spaced as indicated below and an additional fastener within 3 to 4 inches of each end of nailer to prevent boards from twisting at board joints.
 - 1) Perimeter (Zone 2) spacing 48 inches max. and Corner (Zone 3) spacing 24 inches max.
 - f. Masonry Screws: Securing wood to concrete or masonry units as indicated below with fasteners installed within 3 to 4 inches of each end of nailer lengths to prevent wood from twisting at board joints. Do not utilized at perimeter roof edges.
 - 1) Perimeter (Zone 2) spacing of 12 inches maximum and Corner (Zone 3) spacing of 6 inches maximum.
8. Plywood Sheathing Securement: Secure at 12 inches on center in Perimeter (Zone 2) and 6 inches on center in Corner (Zone 3) staggered each direction.
- I. Select fasteners of size and length that are not exposed from the building interior and/or from the ground, or remove protruding fasteners, paint or finish to eliminate exposure.

- J. Thickness of wood nailers flush with adjacent insulation and other materials. Install additional fasteners to ensure nailers are flush.
- K. Unless otherwise detailed, install plywood used as blocking or shim below dimensional lumber such that the fastener head terminates at the dimensional lumber surface.
- L. Do not utilize wood nailers at roof perimeters, expansion joints, roof area dividers, etc. less than 3 feet long.
- M. When multiple nailers are installed stacked two high or more, offset nailers no less than 12" such that joints at nailer end do not line-up vertically.
- N. Fasten each end of nailers with additional fasteners to ensure a smooth transition at butted joints, and to prevent warping and/or twisting.
- O. Shims:
 - 1. Provide plywood and lumber shims as required for the specified height and thickness.
 - 2. Shims to make full contact with stacked rough carpentry. Partial shim contact, and small shim pieces spaced apart are not acceptable.
- P. Curbs:
 - 1. Adjust wood curbs to support rooftop piping, ducts, equipment, etc.
 - 2. Raise equipment to provide required flashing height for roofing.

3.4 CLEANING

- A. Ensure the site and building are cleaned to meet pre-construction conditions, as accepted by the Owner.
- B. Clean the site and building of saw dust from lumber, fasteners and other debris.
- C. Repair or replace damages to the building, grounds, equipment and site to meet pre-construction conditions, as accepted by the Owner.

END OF SECTION 06 10 00

SECTION 07 01 50

PREPARATION FOR REROOFING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Complete preparatory work prior to roof installation including but not limited to:
 - a. Removal of roof assemblies down to the steel deck.
 - b. Raising of mechanical units and/or HVAC units to meet the required minimum flashing height.
 - c. Under roof deck survey
 - d. Preparation of sheet metal flashings to remain.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections apply to this Section:
 - 1. Section 05 01 30 - Steel Roof Deck Repair and Securement
 - 2. Section 06 10 00 - Rough Carpentry
 - 3. Section 07 22 16 - Roof Insulation
 - 4. Section 07 41 13 - Metal Roof Panels
 - 5. Section 07 54 00 - Thermoplastic Single Ply Roofing
 - 6. Section 22 14 26 - Roof Drains

1.3 DEFINITIONS

- A. Removal: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain property of the Owner.
- B. Existing to remain: Protect construction indicated to remain against damage and soiling during demolition. When accepted by Engineer, items may be removed to a suitable, protected storage location during demolition, cleaned and reinstalled in their original locations.
- C. Material ownership: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished items become the Contractor's property. Remove demolished items from the site.

1.4 EXISTING ROOF ASSEMBLIES

- A. Refer to Contract Drawings for existing roof system composition.

1.5 QUALITY ASSURANCE

- A. Qualifications: Previous experience removing roof systems.
- B. Requirements: Comply with governing EPA regulations and hauling/disposal regulations of authorities having jurisdiction.

1.6 SCHEDULING

- A. Do not disrupt Owner's operations during demolition. Provide 72 hours notification to Owner of activities that affect Owner's operations.

1.7 WARRANTIES

- A. Repair or replace damage to existing items under warranty with materials acceptable to the Warrantor.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.1 EXAMINATION

- A. Survey conditions to determine extent of demolition.
- B. Record the conditions of items to be removed/reinstalled and items to be removed/salvaged.
- C. Do not remove elements that result in structural deficiency or collapse the structure or adjacent structures during demolition.
- D. Inspect substrate for soundness and notify Engineer in writing of deficiencies. Commencement of work signifies acceptance of site conditions.

3.2 PREPARATION

- A. Do not begin demolition until utilities have been disconnected/sealed and have been verified as such in writing.
- B. Do not close off or obstruct streets, walks or other adjacent occupied facilities without permission from Owner and authorities having jurisdiction.
- C. Provide safe conditions for pedestrians. Erect temporary protection, walkways, fences, railings and canopies as required by OSHA and other governing authorities.
- D. Provide protection for adjacent building, appurtenances and landscaping to remain. Erect temporary fencing around trees to remain.
- E. Provide temporary weather protection as required to prevent water leakage and damaged to exterior or interior of adjacent structures.

3.3 UTILITIES/SERVICES

- A. Maintain utilities that are to remain in service and protect them against damage during selective site demolition unless authorized in writing by the Owner and authorities having jurisdiction.
 - 1. Locate conduits and equipment attached to the underside of the decking prior to reroofing. Do not disturb conduits or interior components/equipment with insulation fasteners.
 - 2. If utilities serving occupied portions of the site are shut down, provide temporary services.
 - 3. Provide 72 hours' notice to Owner if shut down is required.
 - 4. Where services are removed, relocated or abandoned, provide necessary bypass connections to remaining occupied buildings and areas.

3.4 POLLUTION CONTROLS

- A. Use water, mist, temporary enclosures and other suitable methods to limit the spread of dust and dirt. Comply with local EPA regulations.
 - 1. Do not use water where there is potential for damage to occur or where hazardous conditions, ice or flooding are created.

3.5 UNDER ROOF DECK SURVEY

- A. Prior to work being performed, complete a survey of the under deck components.
- B. Locate and mark conduit, utilities, etc. that interfere with the replacement roof system.
- C. Determine the presence of spray applied fireproofing on the underside of the roof deck. If fireproofing is present, utilize caution when removing and replacing roof system to prevent fireproofing from dislodging. Survey interior of building during tear-off operations and at end of each day. Clean up debris daily. Report displaced fireproofing to the Owner/Engineer.
 - 1. Contractor is responsible to repair displaced fireproofing and repair any interior finishes damaged from the displaced fireproofing.
- D. Notify Owner and Engineer prior to survey being performed.

3.6 REMOVALS

- A. Coordinate and sequence roof removal such that tear-off debris and materials are not stored on or trafficked over the replacement roof system and such that varying heights between roof assemblies does not adversely affect roof drainage.
- B. Demolish and remove construction only to the extent required.
- C. Remove roof membrane, flashings, roof insulation, and sheet metal and discard.
- D. Remove or correct obstructions which interfere with the proper application of materials.
- E. Lift or remove equipment so that flashings can be replaced.

- F. Remove debris to provide clean, dry substrate.
- G. Remove and transport debris in a manner that prevents damage/spills to adjacent buildings and areas.
- H. Dispose of demolished items and materials on a daily basis. On-site storage of removed items is not permitted.
- I. Transport demolished materials off-site and dispose of materials in a legal manner.
- J. Perform progress inspections to detect hazards resulting from demolition activities.

3.7 FLASHING HEIGHTS

- A. Permanently raise roof top equipment as required to achieve 8" minimum flashing height.
- B. Provide additional wood blocking to top of parapet walls and expansion joints to achieve minimum 8" flashing height.
- C. Extend sanitary vents to height required by the applicable Plumbing Code, but no less than 8 inches and no more than 12 inches above the finished roof system.

3.8 SHEET METAL PREPARATION

- A. Receiver Flashing to Remain: Neatly bend receiver up at walls only as required to replace flashings and counterflashing. After installation of flashings and counterflashings, neatly bend receiver flashing back in place using sufficient care to prevent deformation to the receiver flashing.
- B. Saw reglet to a maximum depth of 1-1/4 inches in a straight line to allow proper installation of receiver flashing. Utilize procedures necessary including, but not limited to, saw guides to ensure straight, clean reglets.

3.9 CLEANING

- A. Inspect the site daily and clean up debris and hazards at the end of each day. Keep adjacent roads, drives and walkways in operation and free from construction materials debris.
- B. Clean adjacent structures of dust dirt and debris. Return adjacent areas to original conditions to the satisfaction of the Owner.

END OF SECTION 07 01 50

SECTION 07 22 16

ROOF INSULATION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provide roof insulation system as specified in Section 01 11 00 - Summary of Work and as indicated in Contract Drawings.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections, apply to this Section:

1. Section 05 01 30 - Steel Roof Deck Repair and Securement
2. Section 06 10 00 - Rough Carpentry
3. Section 07 01 50 - Preparation for Reroofing
4. Section 07 41 13 - Metal Roof Panels
5. Section 07 54 00 - Thermoplastic Single Ply Roofing
6. Section 22 14 26 - Roof Drains

1.3 REFERENCE STANDARDS

- A. ASTM C728 - Standard Specification for Perlite Thermal Insulation Board; 2017a (Reapproved 2022).
- B. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2025.
- C. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2024.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2024.
- E. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C; 2024c.

1.4 PERFORMANCE REQUIREMENTS

A. R Value

1. In accordance with the referenced Energy Conservation Code and ASHRAE 90.1.
2. Minimum continuous R-value: 20

3. R value based on Long-Term Thermal Resistance (LTTR) for polyisocyanurate insulation and manufacturer's published data for other insulation components, as tested in accordance with specified the specified.
- B. Wind Design: Install insulation system to meet the required wind uplift pressures as specified in Contract Drawings.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.
- B. Manufacturer's Instructions: Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Shop Drawings: Tapered insulation plan from material supplier with minimum R-value for each roof area.

1.6 QUALITY ASSURANCE

- A. Install insulation in accordance with their respective manufacturer's requirements.
- B. Reject insulation not bearing UL label at point of delivery.
- C. Remove insulation damaged or wetted before, during, or after installation from the job site no later than the next working day from the day such damage or moisture contamination is noted.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in the manufacturer's original sealed and labeled packaging.
- B. Storage: Store materials out of direct exposure to the elements on pallets or dunnage at least 4 inches above ground level at location acceptable to Owner.
 1. Utilize tarps that cover materials to prevent moisture contamination. Remove or slit factory shrouds and/or visqueen; do not use these materials as tarps.
 2. Install vapor retarders under material storage areas located on the ground.
 3. Remove damaged or deteriorated materials from the job site.
- C. Handling: Handle material in such a manner to prevent damage and contamination with moisture or foreign matter.

1.8 PROJECT CONDITIONS

- A. Do not apply insulation during precipitation. Take responsibility for starting installation in the event there is a probability of precipitation occurring during application.
- B. Take necessary action to restrict dust, asphalt, and debris from entering the structure.
- C. Do not remove more roofing than can be replaced with insulation, membrane and flashings in the same day to create a watertight installation.

PART 2 PRODUCTS

2.1 MATERIALS

A. Insulation Boards:

1. Gypsum Substrate:

- a. Fiberglass Mat Faced: Nonstructural, glass mat faced gypsum panel with 500 psi moisture resistant treated core, Type X, and tested in accordance with ASTM C1396/C1396M, ASTM E84 and ASTM E136. Board Size: 4 feet by 8 feet. Thickness: 5/8 inch. Provide non-asphaltic primer surfacing if adhering insulation to gypsum substrate. Acceptable manufacturers include:

- 1) GP Gypsum DensDeck
- 2) DEXcell Glass Mat Roof Board

2. Roof Insulation:

- a. Rigid polyisocyanurate roof insulation board complying with ASTM C1289 Type II, Class 1, Grade 2 and meeting the following requirements:
 - 1) Factory applied glass fiber reinforced cellulosic felt facers on the top and bottom.
 - 2) 24 hours minimum curing time, plus an additional 24 hours minimum per inch thickness, at a minimum of 60 degrees F before shipment from the manufacturer.
 - 3) 2 percent maximum linear change dimensional stability when conditioned at 158 degrees F and 97 percent relative humidity for seven days.
 - 4) Maximum permissible insulation board size for mechanical attachment is 4 feet by 8 feet and for foam adhesive and hot asphalt attachment is 4 feet by 4 feet. Field cutting of larger boards is not acceptable.
 - 5) Maximum Thickness: as indicated in Contract Drawings

3. Tapered Insulation Crickets and Saddles:

- a. Rigid polyisocyanurate roof insulation board complying with ASTM C1289 Type II, Class 1, Grade 2 and meeting the following requirements:
 - 1) Factory applied glass fiber reinforced cellulosic felt facers on the top and bottom.
 - 2) Curing time: 24 hours minimum, plus an additional 24 hours minimum per inch thickness, at a minimum of 60 degrees F before shipment from the manufacturer.
 - 3) Dimensional stability: 2 percent maximum linear change when conditioned at 158 degrees F and 97 percent relative humidity for seven days.
 - 4) Board size: 4 feet by 4 feet.

- 5) Fill Insulation: Rigid polyisocyanurate meeting the above requirements with board size of 4 feet by 4 feet and thickness of 2 inches.
 - 6) Crickets and Saddles: Rigid polyisocyanurate meeting the above requirements with a board size of 4 feet by 4 feet and twice the slope of the field.
4. Cover Board:
- a. Cover board approved by roof system manufacturer. Board Size: 4 feet by 8 feet. Minimum thickness as listed below or as required by roof system manufacturer.
 - 1) Georgia Pacific 1/4 inch DensDeck Prime Roof Board
 - 2) Soprema 1/8 inch Sopraboard
 - 3) DEXcell 1/4 inch FA Glass Mat Roof Board
- B. Insulation Accessories:
- 1. Tapered Edge Strip:
 - a. Perlite: Asphalt impregnated perlite tapered edge strips with 1 inch per foot slope of sizes indicated in Contract Drawings or required by field conditions meeting ASTM C728.
- C. Insulation Mechanical Attachment Materials:
- 1. Steel Deck Fasteners and Stress Plates: Corrosion resistant 3-inch galvalume stress plate and corrosion resistant screw type fasteners for use with steel decks; approved by the insulation manufacturer for the insulation type, thickness and board size specified; fastener length as required by the fastener manufacturer for the insulation thickness specified, and to penetrate the deck a minimum of 3/4 inch and a maximum of 1-1/4 inch.
- D. Adhesives:
- 1. Foam Adhesive: One or two part, VOC compliant, moisture-cured polyurethane foamable adhesive designed as roof insulation adhesive and approved by insulation manufacturer.
 - a. Primer: Provide as required by adhesive manufacturer and substrate conditions.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect substrate for soundness and notify Engineer in writing of deficiencies.
- B. Commencement of work signifies acceptance of substrates. Correct defects in work resulting from accepted substrates at no additional expense to the Owner.

3.2 PREPARATION

- A. Dry and broom roof deck clean of debris and foreign matter prior to installation of insulation system.

3.3 APPLICATION

A. General

1. Apply in accordance with the insulation and roof system manufacturer's instructions and these specifications.
2. Install insulation in full boards, carefully fitted and pushed against adjoining sheets to form tight joints. Gaps exceeding 1/4 inch are not acceptable.
3. Saw cut or knife cut insulation and cover boards in a straight line, not broken. Utilize chalk lines to cut insulation. Uneven or broken edges are not acceptable.
4. Remove insulation dust and debris that develops during insulation cutting operations.
5. Offset joints between successive and adjacent layers of insulation a minimum of six inches.
6. Stagger joints of cover boards one foot (vertically and laterally) to ensure that joints do not coincide with joints from the previous or adjacent layer.
7. On steel decks, apply insulation boards with long dimension of units across deck ribs. Bear ends of insulation boards on top flange of steel deck.
8. Install crickets, saddles and tapered edge strips before the cover board.
9. Adhere tapered edge strips at transitions, terminations and/or penetrations as detailed or required ribbons of foam adhesive to ensure smooth transitions are provided for the roof membrane and flashings.
10. Provide necessary modifications to insulation system or nailers at roof edges as required to ensure a flush and smooth transition is provided for the roof membrane and flashing.
11. Make field modifications of insulation, tapered insulation, tapered edge strips and cants where required to accommodate roof and flashing conditions and to prevent water dams and ponding water. Ponding water at scuppers and cricket valleys is not acceptable.
12. Ponding Water:
 - a. The ponding of water on the roof surface after installation of the roofing system is not acceptable and is grounds for rejection of the roof.
 - b. Ponding is herein defined as precipitation remaining in a four-square foot area or larger, 1/4 inch or deeper for a period of 24 hours from the termination of precipitation.
 - c. Provide modifications to insulation system to ensure proper drainage and prevent standing water including but not limited to reinstallation of roof system or installation of additional tapered insulation.

B. Tapered Insulation System:

1. Install tapered insulation system to provide positive slope for roof drainage without ponding water.
2. Size crickets as shown in the Contract Drawings. Provide modifications to ensure positive slope and prevent standing water along the cricket valley.
 - a. Minimum length to width ratio of 3:1. Fabricate partial crickets with dimensions which result in a minimum length to width ratio of 3:1 if they were extended to full size.
 - b. Unless otherwise noted, fabricate crickets from tapered stock as required to provide the specified minimum slope. For example, when roof slope is indicated as 1/4 inch per foot minimum, fabricate crickets with slope of 1/2 inch per foot minimum.
 - c. Construct crickets on up slope side of curbs to ensure positive drainage.
 - d. Install tapered edge strips at cricket edges to provide a smooth transition between the cricket and insulation system below.
3. Insulation boards may require mechanical fasteners and stress plates at slope transition of crickets to minimize bridging.

C. Roof Drainage:

1. Install drainage sumps as detailed.
2. Carefully lay out the tapered insulation, sumps, drain bowls and scuppers to ensure the finished roof provides drainage with no ponding water.
3. Fabricate miter-cut sumps at drains/scuppers to provide smooth transitions between the insulation system and the drains/scuppers.
4. Ensure sumps provide roof drainage and prevent water dams.
5. Adjust insulation, drains and scuppers to ensure roof drainage and satisfactory substrates for membrane and flashings.
6. Secure drain sump components using specified insulation fasteners or adhesives.
7. Circular sumps and sumps that do not provide smooth transition or that create standing water at the drains are not allowed.

D. Tapered Edge Strips:

1. Install at edges to make transitions as detailed in Contract Drawings.
2. Provide to form crickets in front of curbs wider than 12 inches.
3. Provide slope transition at the outside of drainage sumps.
4. Provide slope at top of parapet walls below coping.
5. Use 1/2 inch by 6 inch tapered edge strips in front of tapered insulation crickets to provide smooth transition.

E. Insulation Mechanical Attachment:

1. Fastener quantity and spacing as required to comply with the requirements of roof system manufacturer's approved, tested assembly.
2. Install fasteners using manufacturer's recommended equipment and in accordance with the manufacturer's requirements.
3. Set fasteners and stress plates secure and tight against the insulation surface and do not over drive.
4. Fasteners to engage the top flange of steel decks only.

F. Foam Adhesive:

1. Position and space adhesive beads as required to comply with the requirements of the roof system manufacturer's approved, tested assembly.
2. Size adhesive beads in accordance with the adhesive manufacturer's guidelines.
3. Place insulation boards onto the beads and "walk" and/or "weight" into place. Place insulation boards into the adhesive in accordance with the adhesive manufacturer's guidelines.
4. Ensure adhesion of insulation and take whatever steps necessary to achieve adhesion, including but not limited to temporary ballasting of insulation until adhesive sets.

END OF SECTION 07 22 16

SECTION 07 41 13
METAL ROOF PANELS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Provide standing seam metal roof panel system.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections, apply to this Section:
 - 1. Section 05 01 30 - Steel Roof Deck Repair and Securement
 - 2. Section 06 10 00 - Rough Carpentry
 - 3. Section 07 01 50 - Preparation for Reroofing
 - 4. Section 07 22 16 - Roof Insulation
 - 5. Section 07 42 13 - Metal Wall Panels
 - 6. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCE STANDARDS

- A. AISC (MAN) - Steel Construction Manual; 2023, with Errata (2025).
- B. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
- C. ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus; 2019.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- E. ASTM D523 - Standard Test Method for Specular Gloss; 2025.
- F. ASTM D822/D822M - Standard Practice for Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings; 2013 (Reapproved 2018).
- G. ASTM D968 - Standard Test Methods for Abrasion Resistance of Organic Coatings by Falling Abrasive; 2025.
- H. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Coating Systems; 2020.
- I. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates; 2025.

- J. ASTM D2247 - Standard Practice for Testing Water Resistance of Coatings in 100 % Relative Humidity; 2025.
- K. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; 2025.
- L. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; 1995 (Reapproved 2024).
- M. ASTM E1680 - Standard Test Method for Rate of Air Leakage through Exterior Metal Roof Panel Systems; 2016 (Reapproved 2022).
- N. FM 4470 - Examination Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction; 2022.
- O. SSPC-SP 10 - Near-White Metal Wet Abrasive Blast Cleaning; 2015.
- P. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.
- Q. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.
- R. UL 1897 - Uplift Tests for Roof-Covering Systems; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide metal roof panel assemblies that comply with performance requirements specified as determined by testing manufacturers' standard assemblies similar to those indicated for this Project, by a qualified testing and inspecting agency.
- B. Submit Manufacturer's sealed engineering calculations, test reports and/or other applicable data certifying the proposed standing seam roofing system meets or exceeds the design criteria listed below.
 - 1. Air Infiltration: Tested in accordance with ASTM E1680 when tested with a 6.24 PSF pressure differential.
 - 2. Water Penetration: Meet or exceed ASTM E1646 when tested with a 6.24 psf pressure differential with no uncontrollable water leakage when five gallons per hour of water is sprayed per square foot of roof area.
 - 3. Wind Design: Provide an approved roof assembly tested in accordance with FM 4470, UL 580 or UL 1897 to resist the design wind uplift pressures required by the Contract Drawings.
 - 4. Thermal Movements: Provide metal roof panel assemblies that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - a. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

5. Structural Panel Deflection: Space framing members and clips supporting the standing seam roofing system to ensure a maximum deflection under applied live load of 20 psf not to exceed L/240 of the span.
6. Fire Testing: Meet ASTM E108 and UL 790 Class 1A.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.
- B. Manufacturer's Instructions: Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Product Test Reports: Submit testing reports for the specified performance requirements. Submit the appropriate documentation to prove South Carolina Building Code design compliance.
- D. Shop Drawings:
 1. Submit shop drawings and erection details, approved by the Standing Seam Metal Roofing Manufacturer, and sealed by a structural engineer licensed in the State of the project. Do not proceed with work until Manufacturer Approved drawings have been submitted for review and acceptance.
 2. Show methods of erection, framing details, roof and wall panel layout, sections and details, anticipated loads, clip spacing for each wind area or zone of the roofs, flashings, sealants, interfaces with materials not supplied and proposed identification of component parts and their finishes.
- E. Engineering Calculations: Provide sealed manufacturer's engineering calculations demonstrating compliance with the performance requirements of this specification and applicable Codes.
 1. Provide written certification, from an independent engineer, licensed in the State, indicating that the structure is capable of supporting additional loads imposed by the retrofit framing system. Provide stamped and sealed plans, by an engineer, licensed in the State, indicating the design for the retrofit metal roof assembly as compliant with specified design loads.
 2. Provide manufacturer's calculations demonstrating holding strength of fasteners, to structural framing, in accordance with submitted test data, provided by fastener manufacturer, based on length of embedment and properties of materials.
- F. Standard Colors: Submit the manufacturers' standard colors for selection by the Owner.
- G. Manufacturer's Qualifications: Requirements for certification noted in Manufacturer's Qualifications under Quality Assurance and AISC (MAN) standards.

1.6 QUALITY ASSURANCE

- A. Source Limitations: Obtain metals panel through once source from a single manufacturer.
- B. Manufacturer's Qualifications: Meet and provide written certification stating:
 1. Regularly engaged in the fabrication of metal standing seam roof systems for at least 10 years, regardless of name change.

2. Maintains a certified installer program for its products and maintains up-to-date authorized roofing contractor list.
3. Written warranty covering durability, color and weathertightness of its roof system and include the insulation curbs and flashings from the roofing manufacturer.
4. Reviewed the project's environmental exposure for proximity to coastal environments, has provided the interpretation that the proximity to the salt and/or brackish water environments is acceptable, and will not make exclusions to the specified Guarantee based solely on the proximity to these exposures.
5. Provide the technical data, shop drawings and calculations specified herein.
6. Provide in-house inspection services.
7. Installer training program including the following:
 - a. Experienced instructors with experience in the application of the Metal Roofing System.
 - b. A formal syllabus for the classroom and hands-on training.
 - c. Classroom instruction with review and thorough understanding of the specific product's technical manual.
 - d. Hands-on mock-up instruction with a review and thorough understanding of the specific product's details.
 - e. Required to take written and/or oral examinations to pass certification.
 - f. Requirement for re-certification of training at a minimum of every five (5) years.
8. Certified the Contractor's personnel and has approved the Installer for the specified Metal Roofing System for the specified Guarantee.
9. Manufacturer's Inspection: The manufacturer's on-site technical representative employed by the manufacturer as a Technical Representative. Provide a minimum of one (1) on-site visit per month; attend the project start-up meeting, on-site for first two (2) start-up days, including observation of seaming of the first three (3) metal roof panels, and at pre-final or final inspection of the metal roofing system installation. Notify Engineer a minimum of forty-eight (48) hours prior to manufacturer's inspections. Copy Engineer on inspection report noting deficiencies within seven (7) days after each site visit.
10. Upon completion of the work and prior to final payment, conduct a final inspection in presence of the Contractor and Engineer. Record deficiencies in the work and document completed repairs. Final payment will not be certified until the manufacturer has given his certification/approval of the work and the required Guarantee has been reviewed by the Engineer.

C. Contractor's Qualifications:

1. Approved installer, certified by the Manufacturer before the beginning of the installation of the standing seam metal roof system.

2. On-site Foreman (provide name and date of training) is the person having received certification and training by the Manufacturer and has received specific training in the proper installation of the selected standing seam metal roof system.
3. The Manufacturer trained and certified Foreman present to supervise work during installation of standing seam roofing and associated materials.
4. No viable claims pending regarding negligent acts or defective workmanship on previously performed or current roofing projects involving the specified standing seam metal roofing system.
5. Provide a list of five projects listing the architect/engineers and/or building owners including individuals' names and telephone numbers for five standing seam metal roofing projects that have been in service for a minimum of two years.
6. Ensure the manufacturer provides the specified on-site technical visits and agrees to compensate the manufacturer as necessary for additional on-site visits required or deemed necessary by the Engineer to resolve deficiencies in the Contractor's workmanship.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery:

1. Coordinate delivery with Engineer/Owner and occupants on site.
2. Deliver material in the manufacturer's original sealed and labeled shrouds and in quantities to allow continuity application.
3. Ensure metal roof system is delivered to the job site properly packaged to provide protection against transportation damage.
4. Inspect materials delivered to the project site. Reject materials damaged during shipping and do not install on the project.

B. Handling:

1. Exercise extreme care in unloading, storing and erecting metal roof system to prevent bending, warping, twisting and surface damage.
2. Handle materials to prevent scratches, dents, bending, twisting, warping and other damages.
3. Remove significantly scratched materials, and materials scratched through to the base steel from the project and replaced.
4. Remove dented, bent or damaged materials resulting in improper fit and detracting from intended aesthetics from the project and replaced.

C. Storage:

1. Store materials out of direct exposure to the elements on pallets or dunnage at least 4 inches above ground level. Place non-sweating tarpaulins to prevent moisture contamination. Factory shrouds and visqueen are not acceptable.

2. Prevent rain from entering bundle by covering with tarpaulin, making provision for air circulation between draped edges of tarpaulin and the ground. Prolonged Storage of sheets in a bundle is not recommended.
3. Protect materials from staining, dirt, dust or water marks. Clean stained materials before installation or replace.
4. Comply with fire prevention requirements for the storage of materials. Locate combustible storage sufficiently away from buildings and non-building structures to eliminate fire exposures. Protect storage of combustible insulation materials from open flame and fire exposures. Control project related ignition sources.

1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when current and forecasted weather conditions permit assembly of metal roof panels according to manufacturers' written instructions and warranty requirements.
- B. Field Measurements: Verify locations of roof framing and roof opening dimensions by field measurements before metal roof panel fabrication and indicate measurements on Shop Drawings. Where field measurements cannot be made without delaying the Work, either establish framing and opening dimensions and proceed with fabricating metal roof panels without field measurements or allow for field-trimming of panels. Coordinate roof construction to ensure building dimensions, locations of structural members, and openings correspond to established dimensions.

1.9 WARRANTY

- A. Provide Manufacturer's Warranty to the Owner upon completion of the project.
 1. Weathertight Warranty: Submit a written warranty executed by Manufacturer agreeing to repair or replace metal roof panel assembly that fails to remain weathertight within the specified warranty period.
 - a. Warranty Period: 20 years from date of Substantial Completion.
 - b. Prorated Conditions: None.
 - c. Limitations of liability: No Dollar Limit (NDL)
 - d. Include weather tight performance of curbs, equipment supports, pipe portals and provided as part of this work.
 - e. Do not include "hold harmless" clause, nor limit liability of Contractor.
 - f. Warranty is subject to laws of South Carolina.
 - g. Venue to settle disputes is county of the project location.
 - h. Coating systems are not an approved warranty repair.
 - i. The following exclusions are not acceptable in the warranty terms, conditions and/or limitations:
 - 1) If a Manufacturer Certified Installer was not present continuously during the installation of the Manufacturer's roof system.

- 2) Failure by the Roofing Contractor to correct deficiencies listed in the Manufacturer inspection reports.
 - 3) If roof leaks are due to ventilators or light transmitting panels.
 - 4) Failure to use long-life fasteners in exposed applications.
- j. Include insulation, sub-framing, purlins, clips, fasteners provided as part of this work.
- k. Warranty issuer must be the fabricator of the panels, not just the manufacturer of the equipment.
- 2. Finish Warranty: Provide manufacturer's written panel finish warranty against deterioration of factory applied finishes.
 - a. Warranty Period: Minimum period of thirty (30) years from date of Substantial Completion.
 - b. Prorated Conditions: None.
 - c. Limitations of liability: Not less than value of material and labor to replace.
 - d. Include weather tight performance of curbs, equipment supports, pipe portals and provided as part of this work.
 - e. Do not include "hold harmless" clause, nor limit liability of Contractor.
 - f. Warranty is subject to laws of South Carolina.
 - g. Venue to settle disputes is county of the project location.
 - h. Coating systems are not an approved warranty repair.
- 3. Contractor's Warranty:
 - a. Five Year Warranty: Manufacturer's Representative and Contractor's Representative will attend two post construction field inspections: 1) the first two years from the date of commencement of the Contractor's Warranty plus or minus one month and 2) the second no earlier than one month prior to the expiration date of the Contractor's Warranty. Submit a written report within seven (7) days of the site visit to the Engineer listing observations, conditions and recommended repairs or remedial action.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Standing Seam Metal Roof Panels:
 - 1. Factory formed; no job formed panels allowed. Contractor cannot be the roll formed.
 - 2. 16 inch wide, striated panel, nominal 2 inch high standing seam rib utilizing male and female rib configurations with factory applied hot-melt mastic or butyl sealant in female rib. Standing seam formed with the Manufacturer's electric seaming tool to produce a 90 degree rolled seam.

- a. Construction Metal Products (CMP) Series 2500
- b. DMI SL2016
- c. Fabral 2" Powerseam
- d. Firestone Building Products Una-Clad UC-6
- e. IMETCO TwinLok
- f. MBCI BattenLok HS
- g. McElroy Metal Maxima 2"
- h. Merchant & Evans 2" ZIP LOK
- i. Metal Roofing Systems (MRS) System 2500
- j. Metal Sales Magna-Loc
- k. Morin SLR
- l. Sentrigard ML200
- m. Ultra Seam US-200
- n. Engineer's Accepted Equivalent

B. Roof Panel Clips:

- 1. Standard Clip: UL Rated, sliding 22-gauge galvanized steel hook in combination with a double fastened 16-gauge galvanized steel base, both at F_y (min) = 33 ksi. Shop installed hot-melt butyl sealant on clip hook for continuity of seal at clip locations. Secure with fasteners in accordance with manufacturer's requirements for substrate
- 2. Bearing Plate: 4 inch by 6 inch by 16 gauge galvanized steel plate.

C. Base Material:

- 1. Galvalume Panels: AZ50 Galvalume coated steel, meeting ASTM A792/A792M, minimum 24 ga., maximum 22 ga. where required for specified wind uplift resistance.

D. Metal Finish:

- 1. Manufacturer's smooth finish, pre-finished color coatings consisting of 70% Kynar 500 fluorocarbon (Polyvinylidene Fluoride PVF2) coating over a urethane primer on the finish side, with primer and a wash coat on the reverse in accordance with AAMA 2605 and ASTM D1005.
- 2. Color of finish for panels and associated trim selected by Owner from Manufacturer's standard color chart.
- 3. Meet or exceed the following:

- a. Abrasion Resistance: Pass 67 liters of falling sand per mil thickness per ASTM D968.
- b. Salt Spray Resistance: Samples diagonally scored and subjected to 5% at 95 degrees F, neutral salt spray per ASTM B117, then taped with Scotch #610 cellophane tape: 1000 hours coated steel, no blistering and no loss of adhesion greater than 1/8 from score line.
- c. Chemical Resistance: No effect after 24 hour exposure of a 10% solution of hydrochloric acid, and 18-hour exposure to 20% sulfuric acid, per ASTM D1308, including exposure to 10% muriatic acid and nitric acid fumes.
- d. Humidity Resistance: No blistering, cracking, peeling, loss of gloss or softening of the finish after 3000 hours aluminum 1000 hours coated steel, of exposure at 100% humidity at 95 degrees F, per Federal Test Method Standard 141, Method 6201 or ASTM D2247.
- e. Chalking Resistance: No chalking greater than #8 rating, per ASTM D659 test procedure after a 3000-hour weatherometer test.
- f. Color Change: Do not exceed 5 NBS units for finish coat color change per ASTM D822/D822M, ASTM G-23, and ASTM D2244 test procedure after 3000-hour weatherometer test.
- g. Specular Gloss: As determined per ASTM D523 at a glossmeter angle of 60 degrees. 35 percent +/-5 specular reflectance.

E. Light Gauge Framing Components:

- 1. Provide bracing angles, cleats and back-up plates as indicated in Contract Drawings or required by metal roof panel manufacturer.
- 2. Conform to ASTM A446 18 gauge, 50 ksi or and ASTM A1011, 16 gauge, 55 ksi, as required by engineering calculations provided by the Manufacturer.
- 3. Protective shop primer coating conforming to FS TT-P-646 with base steel prepared in accordance with SSPC-SP 10.

F. Fasteners:

- 1. Fasteners associated with the roofing installation supplied by, and approved by, the metal roofing manufacturer.
 - a. Fastener length and threads and drill point as required for the metal and substrates being joined. Refer to fastener manufacturer and/or roofing manufacturer published literature. Indicate type of fastener on shop drawings.
 - b. Corrosion resistant, self-tapping/self-drilling fasteners, bolts, nuts, self-locking rivets and other suitable designed to withstand specified design loads.
 - c. Provide factory applied coating on the exposed fastener head and washer to match metal roof system color.
 - d. Provide neoprene-backed washers for exposed fasteners.

- e. Position and space exposed fasteners in a true vertical and horizontal alignment. Use proper torque settings to obtain controlled uniform compression for a positive seal without rupturing the neoprene washer.
2. Exposed Fasteners:
- a. Metal to wood: #12 stainless steel long life fastener, 5/16 inch HWH with bonded EPDM washer, factory painted head and washer to match metal color and length to penetrate substrate a minimum of 1-1/2 inches.
 - b. Metal to sheet metal: 1/4-14 x 7/8 inch long life fastener, corrosion resistant, self-drilling point, self-tapping, stainless steel 5/16" HWH with EPDM sealing washer; factory painted head and washer to match adjacent metal color.
 - c. Metal to light gauge steel: #12-14 x 1-1/4 inch long life fastener, corrosion resistant, self-drilling point, self-tapping, stainless steel 5/16" HWH with EPDM sealing washer; factory painted head and washer to match adjacent metal color.
3. Concealed Fasteners:
- a. Metal to wood: #10-13 GP, 302 stainless steel, low profile pancake head with length to penetrate substrate a minimum of 1 inch.
 - b. Metal to light gauge steel: #12-14 x 1-1/4 inch DP3 corrosion resistant low-profile pancake head of length as required for three threads to penetrate steel substrate.
4. Light Gauge Framing Fasteners:
- a. Slotted Rake Angle to Light Gauge Framing: 1/4-14 x 1-1/4 inch Shoulder Screw
 - b. Light Gauge Framing to Light Gauge Framing: #12-14 x 1 inch DP3, 5/16 inch HWH, self-drilling, carbon steel with corrosion resistant coating.
 - 1) Blazer Self-Drilling Fastener
 - 2) ITW Buildex #12-14 Tek 3
 - 3) SFS #12-14 Impax SD3
 - c. Light Gauge Framing to Wood: #14-13 DP1, pancake head, self-drilling, carbon steel with epoxy coating, length to penetration wood a minimum of 1 inch.
 - 1) Sentry Plus Five Roofing Screw
 - 2) Concealor Pancake Head Screws
- G. Self-Adhering Underlayment: 40-mil minimum thickness sheet, slip-resistant surfacing, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; suitable for high temperature applications up to 250 degrees. Acceptable products include:
- 1. Mid-States Asphalt Quik-Stick HT

2. Grace Ice and Water Shield HT
 3. Carlisle WIP 300 HT
 4. Petersen PAC-CLAD HT
- H. Accessories: Manufactured, supplied and/or otherwise approved by the standing seam roofing Manufacturer.
- I. Sheet Metal Flashings, Closures and Trim:
1. Provide sheet metal flashings, closures and trim fabricated from the specified pre-finished metal of the same gauge, finish and color as the roof panels.
 - a. Zee Closure
 - b. Fascia Cover
 - c. Rake Flashing
 - d. Drip Edge
 - e. Gutter
 - f. Downspouts
 - g. Ridge Cap
 2. Provide sheet metal cleats and attachment components of the same base material, one gauge thicker than the flashing or trim being secured:
 - a. Continuous Cleat
 3. Gutter and downspout attachment components:
 - a. Provide air dried kynar paint or powder coat to match sheet metal finish color. Provide certification delivered to site with materials indicating method of finish
 - 1) Externally Hung Gutter:
 - (a) Gutter Brackets: 1/4 inch x 2 inches
 - (b) Gutter Spacers: 1/16 inch x 1 inch
 - 2) Downspout Hangers: 1/16 inch x 1 inch
- J. Sealants:
1. Polyurethane Sealant: One-component elastomeric gun grade polyurethane sealant conforming to ASTM C920, Type S, Grade NS, Class 25, and use NT, M, A, G, or O as required by substrate conditions. Color to match adjacent materials.
 2. Silicone Sealant: One-component, non-sag, neutral cure, low-modulus, UV resistant, high performance silicone sealant. Meet ASTM C920, Type S, Grade NS, Class 100, Use M, G, A or O. Color to match adjacent materials. Utilize where exposed.

3. Sealant Tape: 3/16-inch x 7/8-inch tri-bead, non-skinning butyl sealant tape. Utilize 2-1/2-inch wide by 3/16-inch thick triple-bead, non-skinning butyl sealant tape where indicated in Contract Drawings or required by metal roof panel manufacturer.
4. Butyl Sealant: Gun grade, non-skinning, non-hardening, flexible blend of butyl rubber and polyisobutylene sealant. Utilized where concealed between sheet metal sections, laps, etc.

2.2 FABRICATION

- A. Roof panels and associated metal roofing components fabricated by, or provided by, a single-source manufacturer to fit together as a completed roofing assembly meeting the requirements specified herein.
- B. Shop and field fabricate trim components meeting the roofing Manufacturers requirements for watertight fit.
- C. Factory form roof panels by the specified Manufacturer, not job formed or formed on portable equipment in the Contractor's shop. In-line leveled prior to roll forming panel profile with fixed base equipment assuring highest level of quality control.
- D. Roll formed in continuous lengths. No panel end laps between ridge and eave.
- E. Fabricate trim, sheet metal flashing and accessories to fit secure and watertight at transitions and details. Replace items with improper fit.
- F. Fabricate roof trim and sheet metal flashing from same specified finish same as roof panel.
- G. Replace panels and components that result in completed installation being loose, bent or warped for proper fit.
- H. Surface-applied sealants are not acceptable to finish poorly fabricated and poorly fitting components. Where components do not fit tight with overlapping metal joints and seams, replace materials to fit properly for overlapping, tight and secure fit.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect substrates and Work to verify the conditions are acceptable and complete.
- B. Replace or repair unsatisfactory, wet or deteriorated roof substrates based on Quantity Allowances and Unit Prices.
- C. Inspect metal roof panels and other components before installation. Repair or replace materials with scratches through the finish. Remove damaged and dented materials, and materials scratched through to the steel base material from the project.
- D. Verify installation in accordance with approved shop drawings and manufacturer's instructions before beginning work including verifying secondary structural members and/or decking are satisfactory for metal roofing system.
- E. Coordinate with metal roof system manufacturer to ensure that reduced clip spacing at eave, rake, ridge and corner areas are accommodated by framing spacing and/or substrate.

- F. Inspect substrates and notify Engineer in writing of deficiencies observed effecting the installation and effecting the completed roofing system and associated components.
- G. Inspect conditions at the walls. Replace deteriorated rough carpentry and resecure rough carpentry.
- H. Inspect conditions at pipes, conduit, fans, stacks and curbs to determine conditions and work requirements necessary to disconnect services, remove equipment, reinstall equipment and install structural supports necessary to support the equipment and curbs. Provide electrical, plumbing, mechanical and other services necessary to relocate rooftop equipment and roof penetrations.
- I. Commencement of work signifies acceptance of substrates. Correct defects in roofing work resulting from accepted substrates to Owner's satisfaction at no additional expense.
- J. Reject and replace materials damaged during shipping, storage or handling.
- K. Inspect storage conditions daily to ensure materials remain protected from damage, condensation, dew, rain or other contamination.

3.2 PREPARATION

- A. Roof Substrate:
 - 1. Dry and broom and/or vacuum clean of loose gravel, stone, dirt, dust, debris and foreign matter prior to installation of the roofing system. Do not use blowers unless accepted by the Engineer/Owner.
 - 2. Remove free water and wet or damp debris from deck substrate surface before installing roofing system.
 - 3. Verify wall substrates are in satisfactory condition before commencement of the Work.
- B. Protection:
 - 1. Protect the building and materials from exposure to weather related damages.
 - 2. Protect building walls and other surfaces with canvas or suitable tarp wherever equipment or materials are taken up to or down from roof.
 - 3. Protect building interiors using suitable methods required to prevent damage from roofing activities.
 - 4. Dry-in the building daily to ensure the building remains watertight. Take necessary measures to protect the building from weather related exposures during the project.
 - 5. Seal deck openings to prevent dust and debris from entering the building.
 - 6. Protect building grounds, landscaping and exterior components and fixtures from damaged during construction activities. Repair damages to meet pre-construction conditions.
- C. Coordination:
 - 1. Coordinate work and associated work activities with the Engineer/Owner

2. Coordinate curb replacement and installation of curbs for fans and equipment with the Engineer/Owner in advance. Limit the scheduled outage of equipment to one day or less, and the schedule for outages in advance with the Engineer/Owner. Work on weekend or non-business hours as necessary to accommodate the Owner and occupancy.
 3. Coordinate raising or relocating vent pipe/soil stack pipes with the Engineer/Owner.
 4. Coordinate interior access and interior work with Engineer/Owner in advance. Do not proceed with interior work unless agreed upon by the Owner and occupants.
- D. Roof Loading, Staging and Storage:
1. Evenly distribute loads of materials on roofs. Do not pre-load roofs with concentrated loads of materials that exceed the roof deck and structure's load bearing capacity.
 2. Secure materials and equipment stored on the roof to prevent items from sliding or falling off of the roof.
 3. Secure materials and equipment on the roof to prevent materials from being displaced by wind.

3.3 APPLICATION

- A. General:
1. Allow for thermal movement, expansion and contraction, of sheet metal components. Install lengths of metal, fastening type and rate, metal joints, and connections to meet sheet metal industry recognized standards and published standards including those referenced herein.
 2. Provide uniform sheet metal sections with corners, joints, and angles mitered, sealed and secured for tight fit.
 3. Overlap, rivet and seal watertight counter flashing corners.
 4. Hem sheet metal edges for strength and appearance.
 5. Provide end closures fabricated to terminate each end of the detail for counterflashing, expansion joints and other applicable components. Conceal the adjacent substrates for watertight closures. Conform to the adjacent conditions and provide for a minimum 4-inch overlap.
 6. Provide necessary cleats or stiffeners and other reinforcements as required to make sections rigid and substantial.
 7. Fabricate, support, cleat, fasten and join sheet metal to prevent warping, "oil canning" and buckling. Adjust substrates, nailers, framing, etc. to ensure finished sheet metal is installed smooth.
 8. Install sheet metal to prevent moisture from entering beyond the detail.
 9. Provide sheet metal transition details with watertight redundancy including, but not limited to self-adhering underlayment membrane, concealed sealants, and metal joint back-up plates. Install, seal and lap secondary protection to ensure if the sheet metal detail fails to shed water, the secondary protection sheds limited moisture infiltration.

10. Do not allow dissimilar metals or other materials to make contact. Where dissimilar material is found in-place, prevent galvanic corrosion by a separation barrier approved by Manufacturer and accepted by Engineer.
 11. Do not allow galvalume and galvanized steel and aluminum materials to be in contact with treated wood products. Provide a physical separation, including self-adhering underlayment to prevent contact.
 12. Relocate plumbing vent pipes and vents to center of metal roof panels.
- B. Self-Adhering Underlayment:
1. Starting at the low point of the roof, adhere underlayment in a shingle fashion with minimum 6 inch end laps and 3 inch side laps. Apply roof cement as required to penetrations and terminations to ensure a watertight condition.
- C. Night Seals/Daily Tie-ins:
1. At end of day's work, or when precipitation is imminent, build a water cut-off at open edges and penetrations. Construct tie-ins to withstand extended periods of service, anticipated storms, precipitation and high winds.
 2. Take necessary precautions during construction to prevent weather related exposures to the building and materials, roof leaks and other weather-related damages resulting from the work included in the project.
 3. Replace building insulation, ceilings, plywood, decking, fixtures, etc. wetted or damaged during Construction.
 4. Repair damages resulting from water that enters under the metal roofing and components, and water that enters the building in the work areas during construction.
- D. Field-Cutting Pre-Finished Metal:
1. Prohibit the use of abrasive/grinding blades, circular saws and reciprocating saws. Prohibit cutting operation that grinds, rips and tears the metal.
 2. Approved cutting tools for Galvalume and pre-finished steel include aviation snips, sheet metal hand shears, electric metal shears and electric nibblers.
- E. Standing Seam Roof Panels:
1. General application in accordance with the Manufacturers published installation instructions.
 2. Install roofing system and components with tools recommended by the roofing manufacturer.
 3. Install panels plumb, level and straight with seams and ribs parallel, conforming to design and manufacturer's published instructions as indicated.
 4. Provide continuous roof panels, with no joints or seams, except where specified.
 5. Install metal roof system weathertight, without waves, warps, buckles, fastening stresses or distortion, allowing for expansion and contraction.

6. Provide concealed fastener/clips at panel attachment locations.
7. Provide exposed fasteners in trim components with pre-painted head and washer with EPDM-backed gasket for watertight seal. Fasteners of size and type for metal thickness and substrate material. Follow the fastener manufacturer's published requirements for fastener application and installation instructions.
8. Install roof clips to allow the completed roofing assembly to accommodate anticipated specified thermal movement.

F. Roof Panel Seams:

1. Seam roof panels with the specified Manufacturer's electric seaming tool, producing a 90-degree seam.
2. Ensure the roof panel is seamed per the Manufacturer's published instructions.
3. Ensure seam has factory-applied sealant in place prior to seaming.
4. Calibrate and service seaming tool by the roofing manufacturer or other approved seaming tool manufacturer/service center. Calibrate and adjust seaming equipment for the metal gage, type and finish.
5. Provide true, straight and aligned seam without bending, warping or scratching through the panel finish.
6. Replace panels due to improper roof panel seaming results.

G. Squareness:

1. Aesthetics of completed roofing is of utmost importance.
2. Provide panels, framing, components and trim aligned true, straight and square.
3. Ensure installation and sequence is square for proper fit of components.
4. Do not exceed tolerance for squareness of 1:500 (1.92 inch per 100 ft).
5. Maintain modularity and alignment of roof panels to prevent roof panel "stair-stepping" or "fanning".
6. Utilize the Manufacturer's "spacer tools", "module makers" and/or measuring tape to maintain consistent roof panel coverage.
7. Check for squareness after installing no more than every five (5) panels to ensure the panels are laying-up square and remain true.
8. Complete installation of roofing and associated components for watertight fit, to accommodate concealed sealants where specified, and to allow for specified thermal movement.
9. Correct abrupt and sharp transitions in the substrate to prevent crimping, bending or poor fitting sheet metal components that result in oil canning.
10. Correct roofing, flashing and sheet metal components that do not meet the specified tolerances.

H. Roof components, flashings, closures and trim:

1. Fabricate and supply sheet metal flashings, trim and closure materials by the standing seam roofing Manufacturer, unless otherwise specified.
2. Roof details and flashings pre-approved by the Manufacturer for inclusion in specified warranty.
3. Install in accordance with Manufacturer's shop drawings, details and published requirements.
4. Install details with redundancy, including secondary metal flashing, concealed sealant and metal roof panel underlayment beneath details.
5. Provide uniform sheet metal sections with corners, joints and angles mitered, sealed and secured.
6. Hem (return) exposed edges for strength and appearance.
7. Fit sheet metal close and neat.
8. Provide cleats or stiffeners and other reinforcements to make sections rigid and substantial.
9. Fabricate, support, cleat, fasten and join sheet metal to prevent warping, oil canning, and buckling.
10. Sheet Metal Laps: Unless otherwise indicated notch and lap ends of adjoining sheet metal sections not less than 4 inches; apply sealant tape or two beads of butyl sealant between sections. Lap miters at corners a minimum of 1 inch and apply butyl sealant between laps. Rivet at 2 inches on center.

I. Zee Closure:

1. Provide between roof panel seams.
2. Set in sealant tape and secure with five fasteners per roof panel spaced in accordance with manufacturer's installation instructions.
3. Tab vertical leg of zee closure and turn onto vertical panel seams. Set tab in butyl sealant.
4. Secure to vertical panel seam with one fastener.
5. Seal edges of zee and tab to vertical seam with sealant.

J. Fascia Cover:

1. Provide fascia cover secured at 12 inches on center where indicated in detail drawings.
2. Lock fascia cover onto continuous cleat if present and hand tong metal edge onto continuous cleat.

K. Rake Flashing:

1. Provide slotted rake angle along rake edge.

2. At beginning roof panel, but panel to rake angle and allow horizontal flange of seam to extend past angle. At ending panel, turn roof panel up rake angle and back 1" minimum to provide horizontal flange for securement.
3. Provide sealant tape along roof panel flange.
4. Fabricate rake flashing and continuous cleat as shown in detail drawings in 8 foot or 10 foot lengths.
5. Install a continuous cleat as indicated in detail drawings fastened to substrate 6 inches on center. Locate fasteners no greater than 1-3/4 inch from the break at the bottom hem.
6. Lock rake flashing onto continuous cleat crimp as shown.
7. Hand tong metal edge onto continuous cleat.
8. Secure rake flashing to roof panel through sealant tape at 6 inches on center.
9. Lap rake flashing seams in shingle fashion with minimum 6 inch overlap and provide three beads of butyl sealant between sheet metal laps.

L. Drip Edge:

1. Provide eave cleat (offset 3/8 inch) secured to structure at 6 inches on center.
2. Provide drip edge secured to offset cleat at 6 inches on center. Set drip edge in butyl sealant and locate fasteners through sealant.
3. Lap seams with minimum 4 inch overlap and provide two beads of butyl sealant between sheet metal laps.
4. Field notch roof panel legs and bend pan to form open hem to lock onto drip edge. Install to accommodate thermal movement.

M. Ridge:

1. Lock back-up plate to panel end along both sides of ridge.
2. Secure back-up plate (offset 3/8 inch) to structure.
3. Provide 3 inch long sealant tape along top of female panel seam before male side of next roof panel is installed.
4. Provide zee closure as specified above.
5. Provide sealant tape along top of zee closure.
6. Provide ridge vent secured at 6 inches on center into zee closure. Do not install fasteners through panel seams.
7. Lap adjoining sections of ridge vent not less than 1 inch and provide butyl sealant between sections.
8. Provide sealant tape along top of ridge vent.

9. Provide ridge cap secured at 6 inches on center through sealant tape. Do not install fasteners through panel seams.
10. Lap adjoining sections of ridge cap a minimum of 4 inches and provide two beads of butyl sealant between sheet metal laps.

N. Gutters:

1. Fabricate to profile shown in Contract Drawings.
2. Formed in 10 foot lengths. Joints in gutters lapped a minimum of 1 inch, riveted 1 inch on center. Install butyl sealant between gutter sections and silicone sealant at exposed inside edge and on rivets. Lap joints in the direction of water flow if possible.
3. Provide butt type expansion joints in gutters at spacing appropriate for the type material used to fabricate gutters. Refer to SMACNA Manual Figure 1-7. Maximum length of gutters 50 feet.
4. Provide downspout outlets in downspout locations. Refer to SMACNA Manual Figure 1-33B. Gutter outlet tubes tabbed a minimum of 1 inch, set in a bead of butyl sealant and secured to gutter with a minimum of two rivets per tab.
5. Attachment: Space brackets and spacers 36 inches on center, staggered. Rivet spacers to both sides of the gutter only. Secure brackets to wood blocking with two stainless steel fasteners.
6. Hang gutters level.

O. Downspouts:

1. Fabricate downspouts in 10 foot lengths. Refer to SMACNA Architectural Sheet Metal Manual Figure 1-32B.
2. Tie into below grade storm drainage system or if no below grade system is present, kick-out above grade onto concrete splash blocks. Fill in soil to provide slope away from building.
3. Provide square to round transition to tie into below grade storm drainage system.
4. Secure to the structure with two-piece hangers spaced no more than 8 feet apart with a minimum of two hangers per downspout with a hanger located within 12 inches from bottom. Prime and paint hangers to match downspouts. Refer to SMACNA Architectural Sheet Metal Manual Figure 1-35H.
5. Fashion downspouts to run back to (at overhangs) and parallel to the facility walls.
6. Provide discharge elbow at the base of downspout where it kicks out onto splash pan or splash block.
7. Where downspouts discharge onto lower adjacent roof areas, provide splash pans at discharge as specified below.

P. Fasteners:

1. Install fasteners as specified, detailed and as published and designed by the fastener manufacturer for the materials being joined.

2. Consult and follow the fastener manufacturer's published literature for proper preparation and installation.
3. Properly seat fasteners, do not over drive or under drive. Do not bend, dent or warp sheet metal during fastener installation.
4. Pre-drill substrates where required to properly install fasteners.
5. Replace improperly driven/installed fasteners with properly sized fastener for each application.
6. Rivets: #44 stainless steel rivets with stainless steel mandrel with factory painted head to match adjacent sheet metal. Length of rivet to properly fasten particular sheet metal components.

Q. Sealants:

1. Seal sheet metal joints and junctures between sheet metal and adjacent substrates with specified, compatible sealants.
2. Clean sheet metal and adjacent substrates free of dust, debris and incompatible coatings.
3. Prime and prepare sheet metal and adjacent substrates to meet sealant manufacturers' published literature and recommendations.
4. Inspect sheet metal joints before sealant application. Fasten and/or tightly fit joints to prevent sealed joints from buckling or opening.
5. Ensure environmental conditions are dry and precipitation is not anticipated during, or no less than 24 hours after, sealant application. Follow sealant manufacturers' published literature regarding environmental conditions.
6. Apply and tool sealant as indicated and recommended in sealant manufacturers' published literature.

3.4 CLEAN UP

- A. Dispose of excess materials and remove debris from site. Maintain construction related debris in approved disposal containers.
- B. Clean work in accordance with manufacturer's recommendations.
- C. Protect work against damage until final acceptance. Replace or repair, to the satisfaction of the Owner, work that becomes damaged prior to final acceptance.
- D. Touch up minor scratches and abrasions with touch up paint supplied by the metal roof system manufacturer. Minor scratches are considered scratches that extend into the finish only, not down to the base metal:
 1. Scratches that extend into the paint finish only and not down to the base metal.
 2. Scratches that do not extend more than 4 inches in length.
 3. Where no more than 2 scratches in lengths of less than 4 inches are present in a 1 sf area of a metal roof panel.

- E. Replace significantly scratched metal panels.
 - 1. Scratches that extend down to the base metal.
 - 2. Scratches that extend more than 4 inches in length.
 - 3. Where more than 2 scratches in lengths less than 4 inches are present in a 1 sf area of a metal roof panel.
 - 4. Where touch up paint is visible when viewing the metal roof panels from a common pedestrian area from the ground as judged by the Owner and Engineer.
- F. Do not allow panels or trim to come in contact with dissimilar metals including copper, lead or graphite. Control water run-off from dissimilar materials.
- G. Remove metal dust and cut debris produced by cutting, drilling and fastening. Do not allow metal dust and cut debris to remain on pre-finished metal panels.
- H. Prevent metal chips, shavings, etc. from staining the building, roof and associated fixtures and components. Remove rust stains.
- I. Prevent damage during cleaning activities. Do not allow cleaning materials and methods to damage building, grounds, components or fixtures.
- J. Ensure trash and debris, especially nails and shingles, are removed from the yard and grounds. Place nails, shingles, sharp sheet metal scraps and other construction related debris in suitable waste containers.

END OF SECTION 07 41 13

SECTION 07 42 13
METAL WALL PANELS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Provide prefinished, prefabricated nonstructural exposed fastener wall panel providing cladding protection of a weather barrier substrate.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections, apply to this Section:
 - 1. Section 06 10 00 - Rough Carpentry
 - 2. Section 07 41 13 - Metal Roof Panels
 - 3. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCE STANDARDS

- A. ASTM A792/A792M - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process; 2023.
- B. ASTM D523 - Standard Test Method for Specular Gloss; 2025.
- C. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; 2005 (Reapproved 2017).

1.4 PERFORMANCE REQUIREMENTS

- A. Design Requirements:
 - 1. Provide factory preformed wall panel system tested and certified by the manufacturer to comply with specified requirements under installed conditions.
 - 2. Provide one-piece, single length wall panels.
- B. Attachment of Panels as determined in accordance with ASTM E1592 along with holding strength of fasteners to structure in accordance with submitted test data, provided by fastener manufacturer, based on length of embedment and properties of materials.
 - 1. Do not exceed 4 feet on center for fastener spacing for attachment of panels.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.

- B. Manufacturer's Instructions: Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Shop Drawings: Show details, trim pieces, transitions and closures necessary to install wall panels.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
 - 1. Minimum of 10 years' experience supplying metal siding to the region where the work is performed.
- B. Installer Qualifications:
 - 1. Acceptable to, licensed or certified by manufacturer.
 - 2. Not less than 3 years' experience with systems.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Protect against damage and discoloration.
- B. Handle panels with non-marring slings.
- C. Do not bend panels.
- D. Store panels above ground, with one end elevated for drainage.
- E. Protect panels against standing water and condensation between adjacent surfaces.
- F. If panels become wet; separate sheets, wipe dry with clean cloth, and allow to air dry.
- G. Remove strippable film coating prior to installation and do not allow it to remain on the panels in extreme cold, heat or in direct sunlight.
- H. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 WARRANTY

- A. Finish Warranty: Provide manufacturer's written panel finish warranty against deterioration of factory applied finishes.
 - 1. Warranty Period: Minimum period of thirty (30) years from date of Substantial Completion.
 - 2. Prorated Conditions: None.
 - 3. Limitations of liability: Not less than value of material and labor to replace.
 - 4. Do not include "hold harmless" clause, nor limit liability of Contractor.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers:
 - 1. Construction Metal Products (CMP)
 - 2. DMI
 - 3. Fabral
 - 4. Firestone Building Products
 - 5. IMETCO
 - 6. MBCI
 - 7. McElroy
 - 8. Merchant & Evans
 - 9. Metal Roofing Systems
 - 10. Metal Sales
 - 11. Morin
 - 12. Ultra Seam

2.2 PRODUCTS

- A. Exposed Fastener Wall Panel:
 - 1. Base Metal: 24-gauge, zinc-coated steel, structural quality ASTM A446, Grade A, G90 hot-dip galvanized conforming to ASTM A525.
 - 2. Profile: Exposed fastener "R" panel.
 - 3. Panel size: 36 inches in width
 - 4. Nominal 1-1/4 inch depth

2.3 RELATED MATERIALS

- A. Fasteners:
 - 1. Exposed Fastener Screws:
 - a. For metal: M#10-16 x 1" long self-drilling, self-tapping pancake head Phillips drive screws with EPDM or PVC washer under heads of fasteners bearing on weather side of metal wall panels. Screw heads to match color of wall panel by means of plastic caps or factory applied coating.

- b. For wood: #10-12 x 1" long A-point fastener, pancake head Phillips drive screws with EPDM or PVC washer under heads of fasteners bearing on weather side of metal wall panels. Screw heads to match color of wall panel by means of plastic caps or factory applied coating.
 - 2. Blind Rivets: Solid-threaded, sealed stem type with EPDM washer under head and factory painted heads to match wall panel finish color.
- B. Accessories:
 - 1. Provide manufacturer's standard accessories and other items essential to completeness of installation including anchor clips, trim, corner closures, flashing, and fascia.
 - 2. Form flashings, closure, and trim from same gauge and finish as wall panels.
- C. Metal Wall Panel Underlayment: Self-adhered, air barrier membrane with an engineered film specifically designed to be water resistant and vapor permeable.
 - 1. Grace Perm-A-Barrier VPS
 - 2. VaproShield WrapShield SA
 - 3. Henry Blueskin VP 160
- D. Hat Channel Sub Framing: 5/8 inch x 5-1/2 inch, 16-gauge, galvanized steel hat channel.
- E. Sub Framing Anchors: 1/4-inch diameter metal-based expansion anchor with stainless steel pin of length to penetrate substrate a minimum of 1-1/2 inches.
- F. Sealant: Refer to Section 07 62 00 - Sheet Metal Flashing and Trim. Sealant color to match wall panel.
- G. Metal Wall Panel Closures:
 - 1. Foam closure to match metal panel profile.

2.4 FABRICATION

- A. Correctively leveled and handled to minimize stress and waviness of sheet steel.
- B. Form and fabricate sheets, seams, strips, clips, valleys, ridges, edge treatments, integral flashings, and other components of the metal roofing to the profiles, patterns, and drainage arrangements as determined by Engineer, to provide permanent leakproof construction, with no oil canning or panel distortion.
 - 1. Fabricate exposed items of prefinished sheet metal, color to match panels.
 - 2. Hem exposed edges on underside 1/2-inch miter and seam corners.
 - 3. Provide for thermal expansion and contraction of the Work.
 - 4. Seal joints to achieve leak proof construction per manufacturer's detail.
- C. Fabricate vertical faces with bottom edge formed outward 1/4 inch and hemmed to form drip.

- D. Provide continuous length panels with no end laps.
- E. Factory form panels. Field formed panels are not acceptable.

2.5 FINISH

A. Exterior Finish:

- 1. 70 percent Kynar 500/Hylar 5000 for a total 1.0 mil dry film thickness with a specular gloss of 10-15 percent when tested in accordance with ASTM D523 at 60 degrees.
- 2. Color: To be Selected by Owner.

B. Interior Finish:

- 1. Primer Coat Material: Corrosion-resistant primer; primer coat dry film thickness: 0.15 mils; finish coat material: polyester paint, finish coat dry film thickness: 0.35 mils.
- 2. Total Interior Dry Film Thickness: 0.50 mils.
- 3. Color: Off-White.

PART 3 EXECUTION

3.1 EXAMINATION

A. Substrate:

- 1. Examine substrate to ensure that it is properly secured and prepared to receive metal wall panels.
- 2. Ensure substrate is installed flat, free from objectionable warp, wave, and buckle.

3.2 INSTALLATION

A. Hat Channel Sub-Framing:

- 1. Secure to wall with specified fasteners in accordance with fastener manufacturer's installation instructions.
- 2. Spacing as indicated in Contract Drawings or as required for metal wall panel attachment.

B. Metal Wall Panels:

- 1. Follow panel manufacturer's directions.
- 2. Install panel seams vertically.
- 3. Lap panels away from prevailing wind direction.
- 4. Do not stretch or compress panel side-laps.
- 5. Secure panels without warp or deflection.
- 6. Clean and dry surfaces prior to applying sealant.

7. Exposed fasteners are not allowed, except to fasten flashings, at fixed points, or as indicated on Drawings.
 8. Field apply sealant to penetrations, transitions, and other locations necessary to prevent water infiltration.
 9. Leave 1/4-inch space between bottom of metal wall panels and receiver flashing.
- C. Flashing:
1. Follow manufacturer's directions and Engineer accepted Shop Drawings.
 2. Install flashings to allow for thermal movement.
 3. Remove strippable protective film preceding flashing installation.
 4. Make end cuts and install sealant and flashings to achieve weathertight installation.
- D. Cutting and Fitting:
1. Neat, square and true. Torch cutting, electric saws and grinders with abrasive wheels are prohibited where cut is exposed to final view.
 2. Openings 6 inches and larger in one direction: Shop fabricate and reinforce to maintain original load capacity.
 3. Where necessary to saw-cut panels, debur cut edges.
- E. Dissimilar Metals:
1. Where sheet metal is in contact with dissimilar metals, execute juncture to facilitate drainage and minimize possibility of galvanic action.
 2. At point of contact with dissimilar metal, coat metal with protective paint or tape which can be placed between metals.

3.3 PROTECTION

- A. Protect work as required to ensure no metal wall panel system damage at time of final completion.
- B. Do not allow panels or trim to come in contact with dissimilar metals including copper, lead or graphite. Control water run-off from dissimilar materials.
- C. Remove metal dust and cut debris produced by cutting, drilling and fastening. Do not allow metal dust and cut debris to remain on pre-finished metal panels.
- D. Prevent metal chips, shavings, etc. from staining the building, roof and associated fixtures and components. Remove rust stains.
- E. Prevent damage during cleaning activities. Do not allow cleaning materials and methods to damage building, grounds, components or fixtures.

3.4 REPAIRS

- A. Touch up minor scratches and abrasions with touch up paint supplied by the metal roof system manufacturer. Minor scratches are considered scratches that extend into the finish only, not down to the base metal:
 - 1. Scratches that extend into the paint finish only and not down to the base metal.
 - 2. Scratches that do not extend more than 4 inches in length.
 - 3. Where no more than 2 scratches in lengths of less than 4 inches are present in a 1 sf area of a metal roof panel.
- B. Replace significantly scratched metal panels.
 - 1. Scratches that extend down to the base metal.
 - 2. Scratches that extend more than 4 inches in length.
 - 3. Where more than 2 scratches in lengths less than 4 inches are present in a 1 sf area of a metal roof panel.
 - 4. Where touch up paint is visible when viewing the metal roof panels from a common pedestrian area from the ground as judged by the Owner and Engineer.

END OF SECTION 07 42 13

SECTION 07 54 00

THERMOPLASTIC SINGLE PLY ROOFING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:

1. Provide adhered thermoplastic membrane and flashings to provide a permanently watertight system.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections, apply to this Section:

1. Section 05 01 30 - Steel Roof Deck Repair and Securement
2. Section 06 10 00 - Rough Carpentry
3. Section 07 01 50 - Preparation for Reroofing
4. Section 07 22 16 - Roof Insulation
5. Section 07 62 00 - Sheet Metal Flashing and Trim
6. Section 22 14 26 - Roof Drains

1.3 REFERENCE STANDARDS

- A. ASTM D4434/D4434M - Standard Specification for Poly(Vinyl Chloride) Sheet Roofing; 2021.
- B. ASTM D6754/D6754M - Standard Specification for Ketone Ethylene Ester Based Sheet Roofing; 2015.
- C. FM 4470 - Examination Standard for Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction; 2022.
- D. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Current Edition, Including All Revisions.
- E. UL 790 - Standard for Standard Test Methods for Fire Tests of Roof Coverings; Current Edition, Including All Revisions.
- F. UL 1897 - Uplift Tests for Roof-Covering Systems; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.4 PERFORMANCE REQUIREMENTS

- A. Install roofing system to meet UL 790 Class A Fire Rating.

- B. Wind Uplift Strength: Provide an approved roof assembly tested in accordance with FM 4470, UL 580 or UL 1897 to resist the minimum required wind uplift strength specified in the Contract Drawings.

1.5 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.
- B. Manufacturer's Instructions: Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Roof System Assembly Letter: Letter from roof system manufacturer listing roof assembly components along with their method of attachment and acceptance of the specified roof system warranty terms. Assembly letter should match the submitted test report documentation and specified assembly.
- D. Test Reports: Submit documentation of approved, tested roof system to meet the specified requirements for the following:
 - 1. Wind uplift pressures
 - 2. UL Fire Resistance Rating
- E. Shop Drawings:
 - 1. Submit manufacturer approved drawings and details for conditions not depicted in Contract Drawings including but not limited to inside corners, outside corners, lap seams, etc.

1.6 QUALITY ASSURANCE

- A. Manufacturer Requirements:
 - 1. Written contractor/installer approval program.
 - 2. Primary membrane products (including roof membrane and flashing membrane) manufactured by other manufacturers and private labeled are not acceptable.
- B. Contractor Requirements:
 - 1. Install roof system by a Contractor authorized by the membrane manufacturer for a minimum of two years with manufacturer's highest certification level.
 - 2. Application of the roofing system accomplished by primary roofing contractor, his roofing foreman, and sufficient applicator technicians who have been trained and approved by the manufacturer of the single ply roofing system. Submit evidence of qualification from the manufacturer.
- C. No deviations made from the Contract Documents or the accepted shop drawings without prior written acceptance by the Engineer.
- D. Complete work by personnel trained and authorized by the membrane manufacturer.
- E. Upon completion of the installation, provide inspection by a representative of the membrane manufacturer to review the installed roof system and document deficiencies.

- F. Provide manufacturer written verification indicating seams have been probed and are watertight.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials in the manufacturer's original sealed and labeled packaging and in quantities required to allow continuity of application.
- B. Storage: Store materials out of direct exposure to the elements on pallets or dunnage at least 4 inches above ground level at location acceptable to Owner.
 - 1. Utilize tarps that cover materials to prevent moisture contamination. Remove or slit factory shrouds and/or visqueen; do not use these materials as tarps.
 - 2. Install vapor retarders under material storage areas located on the ground.
 - 3. Remove damaged or deteriorated materials from the job site.
 - 4. Store membrane rolls lying down on pallets and protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions affecting the ease of membrane weldability.
 - 5. Store adhesives at temperatures approved for the product.
 - 6. Store flammable materials in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material manufacturer/supplier.
 - 7. Remove damaged materials and replace at no cost to the Owner.
- C. Handling: Handle materials in such a manner as to prevent damage and contamination with moisture or foreign matter.

1.8 PROJECT CONDITIONS

- A. Do not apply roofing during precipitation. Contractor assumes responsibility for starting installation in the event there is a probability of precipitation occurring during application.
- B. Only install as much of the roofing as can be made weathertight each day, including flashing and detail work. Clean and hot air weld seams before leaving the job site that day.
- C. Schedule and execute work without exposing the interior building areas to the effects of inclement weather. Protect the building and its contents against risks.
- D. Ensure surfaces to receive insulation, membrane or flashings are dry. Provide the necessary equipment to dry the surface prior to application.
- E. Secure construction, including equipment and accessories, in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- F. Install uninterrupted waterstops at the end of each day's work and remove before proceeding with the next day's work. Do not allow waterstops to emit dangerous or unsafe fumes and remain in contact with the finished roof as the installation progresses. Replace contaminated membrane at no cost to the Owner.

- G. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, provide necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Provide a protection layer of plywood over insulation board for roof areas that receive rooftop traffic during construction.
- H. Prior to and during application, remove dirt, debris and dust from surfaces, either by vacuuming, sweeping, blowing with compressed air and/or similar methods.
- I. Do not allow contaminants, grease, fats, oils, and solvents to come into contact with the roofing membrane. Report rooftop contamination that is anticipated or that is occurring to the Engineer and membrane manufacturer to determine the corrective steps necessary.
- J. If unusual or concealed condition is discovered; stop work and notify Engineer of such condition in writing within 24 hours.
- K. Do not install the roofing membrane under the following conditions without consulting the membrane manufacturer's technical department for precautionary steps:
 - 1. The roof assembly permits interior air to pressurize the membrane underside.
 - 2. The wall/deck intersection permits air entry into the wall flashing area.

1.9 WARRANTIES

- A. Manufacturer's Guarantee: Manufacturer's standard form, non-pro-rated, without monetary limitation or deductibles, in which manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks or breaches in the primary roof membrane causing moisture to enter the substrate below (even if visible leaks are not observed inside the facility).
 - 1. Warranty Period: 20 years from date of Substantial Completion
 - 2. Warranty to remain in effect for wind speeds up to 72 mph.
 - 3. Warranties requiring the Owner's signature are not acceptable.
 - 4. Warranty to include membrane materials, adhesives, related materials and fasteners specified in this section and the following materials specified in other sections as follows:
 - a. 07 22 16 - Roof Insulation
 - b. Polymer Clad Metal as specified in Section 07 62 00 - Sheet Metal Flashing and Trim
- B. Contractor's Warranty: Five Year Warranty: Manufacturer's Representative and Contractor's Representative will attend two post construction field inspections: 1) the first two years from the date of commencement of the Contractor's Warranty plus or minus one month and 2) the second no earlier than one month prior to the expiration date of the Contractor's Warranty. Submit a written report within seven (7) days of the site visit to the Engineer listing observations, conditions and recommended repairs or remedial action.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Subject to compliance with requirements herein, provide roof system from a single source. Manufacturers:
1. Sika Sarnafil
 2. Fibertite
 3. Siplast
 4. Soprema
 5. Carlisle Syntec

2.2 MEMBRANE MATERIALS

- A. Membrane: Thermoplastic membrane with fiberglass and/or polyester reinforcement meeting ASTM D4434/D4434M or ASTM D6754/D6754M . Acceptable products:
1. Sika Sarnafil 60-mil G410
 2. Fibertite 45-mil SM
 3. Siplast Parasolo PVC Kee 60-mil
 4. Soprema Sentinel P150
 5. Carlisle Sure-Flex PVC 60-mil Membrane
- B. Flashing/Stripping Membrane: Non fleeceback, thermoplastic membrane reinforced with fiberglass.
1. Sika Sarnafil 60-mil G410
 2. Fibertite 45-mil SM
 3. Siplast Parasolo PVC Kee Smooth 60-mil
 4. Soprema Sentinel P150 Membrane
 5. Carlisle Sure-Flex PVC 60-mil Membrane
- C. Asphalt Resistant Flashing/Stripping Membrane: Thickness to match Flashing/Stripping Membrane, non fleeceback, asphalt resistant, thermoplastic membrane reinforced with fiberglass or polyester. Utilize where flashing membrane is in contact with residual asphaltic materials or as required by the manufacturer.
- D. Membrane and Flashing Membrane Color: White

2.3 ADHESIVES

- A. Membrane Adhesive: Membrane manufacturer's solvent-based adhesive.
1. Sika Sarnafil Sarnacol 2170

2. Fibertite FTR 190e
 3. Siplast Parasolo PVC Bonding Adhesive
 4. Soprema Sentinel S Bonding Adhesive
 5. Carlisle Sure-Flex PVC Low VOC Bonding Adhesive
- B. Flashing Adhesive: Membrane manufacturer's solvent-based adhesive.
1. Sika Sarnafil Sarnacol 2170
 2. Fibertite FTR 190e
 3. Siplast Parasolo PVC Bonding Adhesive
 4. Soprema Sentinel S Bonding Adhesive
 5. Carlisle Sure-Flex PVC Low VOC Bonding Adhesive

2.4 RELATED MATERIALS

- A. Fluid Applied Flashing: Roof system manufacturer's approved, reinforced, PMMA liquid applied flashing.
1. Sika Sarnafil Liquid Flashing
 2. Fibertite - Soprema Alsan RS
 3. Siplast Parapro 123 Flashing System
 4. Soprema Alsan RS 230 Flash
 5. Carlisle Liquiseal Liquid Flashing
- B. T-joint Patch: Membrane manufacturer's circular patch welded over T-joints formed by overlapping thick membranes.
- C. Corner Flashing: Membrane manufacturer's pre-formed inside and outside flashing corners that are hot-air welded to membrane or polymer clad metal base flashings.
- D. Coverstrip: 8 inch wide pre-cut polyester reinforced flashing strip.
- E. Pipe Flashing: Membrane manufacturer's pre-formed pipe boot flashing that is hot-air welded to membrane and secured with a stainless-steel draw band and sealant.
- F. Termination Bar: Manufacturer's 1/8 inch by 1 inch mill finish extruded aluminum bar with pre-punched slotted holes.
- G. Lipped Termination Bar: 3/4 inch wide, extruded mill finished aluminum (6063 T6 Alloy) with 3/16 inch lip and pre-punched oval holes at 6 inches on center.
- H. Walkway Pad: Walkway pad by manufacturer of membrane.
- I. Oversized Backer Rod: Closed-cell polyurethane backer-rod or soft polyethylene backer rod as recommended by roof manufacturer. Sized 25% greater than joint for tight fitting compression in the joint.

- J. Polymer Clad Metal: Refer to Section 07 62 00 - Sheet Metal Flashing and Trim.

2.5 SEALANTS AND CLEANERS

- A. Sealant: Manufacturer's multi-purpose sealant.
- B. Sealant Tape: Minimum 1/2 inch wide, non-skinning, butyl sealant tape.
- C. Primary Membrane Cleaner: High-quality solvent cleaner provided by membrane manufacturer for use as a general membrane cleaner.
- D. Pre-weld Cleaner: High-quality solvent based seam cleaner with moderate evaporation rate as recommended and provided by membrane manufacturer.

2.6 FASTENERS

- A. Flashing Membrane Termination Screws: #12 corrosion resistant hex or pan head screws with length to penetrate substrate a minimum of 1-1/2 inch.
- B. Concrete and Masonry Flashing Membrane Termination Anchors:
 - 1. 1/4-inch diameter metal-based expansion anchor with stainless steel pin of length to penetrate substrate a minimum of 1-1/2 inch.
 - 2. Masonry screws approved by membrane manufacturer, 1/4-inch minimum diameter, corrosion resistant, with Phillips flat head. Length to provide minimum 1-1/2 inch embedment into substrate.
- C. Steel Deck Fasteners and Plates: #12 corrosion resistant approved by membrane manufacturer of length to penetrate top flange of steel deck a minimum of 1 inch with galvalume plates approved for membrane attachment.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Inspect the surface of the insulation or substrate prior to installation of the roof membrane.
- B. Verify that the substrate is dry, clean, smooth, and free of debris, loose material, oil, grease, or other foreign matter. Remove sharp ridges and other projections and accumulations of bitumen to ensure a smooth surface before roofing.
- C. Replace broken, delaminated, wet or damaged insulation boards.
- D. Repair deteriorated substrates.
- E. Beginning installation means acceptance of prepared substrate.

3.2 PREPARATION

- A. Remove, cover or flash using compatible, approved materials substrates containing asphalt. Do not allow PVC to contact substrates containing asphalt materials.
- B. Provide necessary protection from adhesive vapors to prevent interaction with foamed plastic insulation.

3.3 ADHERED MEMBRANE INSTALLATION

- A. Over the properly installed and prepared substrate, apply membrane adhesive in accordance with the manufacturer's instructions and application rates utilizing equipment as required by the manufacturer.
 - 1. Do not allow adhesive to skin-over or surface-dry prior to installation of roof membrane.
 - 2. Comply with the manufacturer's published requirements for adhesive application rates.
 - 3. Count the amount of pails of adhesive used per area per day to verify conformance to the specified adhesive rate.
 - 4. Do not apply adhesive in seam areas.
 - 5. Replace notched squeegees daily or as notches are reduced below 1/4 inch.
- B. Place roof membrane into the adhesive in accordance with manufacturer's instructions.
- C. Shingle seams with flow of water. Overlap upslope, adjacent rolls 3 inches over previous roll. This process is repeated throughout the roof area.
- D. After placement of membrane, press roll into place with the manufacturer's recommended roller by frequent rolling in two directions.
- E. Weld membrane coverstrips at fleeceback membrane seams without a factory selvage edge.

3.4 MEMBRANE TERMINATION

- A. Terminate membrane at walls and curbs as shown in the contract drawings.
 - 1. Roof Deck: Mechanically terminated using specified fasteners and plates 6 inches on center.
 - 2. Wood Wall Substrate: Turn membrane up wall 1 inch and mechanically terminate using specified screws 8 inches on center with a termination bar.
 - 3. Concrete/Masonry Wall Substrate: Turn membrane up wall 1 inch and mechanically terminated using specified anchors 8 inches on center with a termination bar.
- B. Terminate membrane at penetrations as shown in the contract drawings.
 - 1. Fasten membrane 6 inches on center or a minimum of 4 fasteners per penetration into the structural deck using fasteners and plates as approved by the membrane manufacturer for the deck substrate.
- C. Extend membrane over roof edge a minimum of 2 inches below the perimeter wood blocking. If fleeceback membrane is utilized, trim membrane flush with outside edge of roof and hot-air weld a non fleeceback flashing membrane to extend over the roof edge.
- D. Provide sealant tape at base of flashing membrane on outside of wall to prevent moisture infiltration.

3.5 FLASHING INSTALLATION

A. General

1. Install flashings concurrently with the roof membrane as the job progresses.
2. Temporary flashings are not allowed.
3. Do not tape seams as temporary measure; hot-air weld seams before the end of each day.
4. Adhere flashings to compatible, dry, smooth, and solvent-resistant surfaces.
5. Where substrates are incompatible with adhesives and PVC materials, remove the incompatible materials and replace with a compatible substrate or install compatible PVC flashing materials.
6. Use caution to ensure adhesive fumes are not drawn into the building.

B. Adhesive for Flashing Membrane

1. Over the properly installed and prepared flashing substrate, apply flashing adhesive according to manufacturer's installation instructions. Apply adhesive in smooth, even coats with no gaps, globs or similar inconsistencies.
2. Press the sheet firmly in place with a hand roller to ensure bond and adhesion.
3. Do not apply adhesive in seam areas that are to be welded.

C. Mechanically terminate flashings a minimum of 8 inches above the finished roofing surface using specified method indicated in the Contract Drawings.

D. Cut and provide hot-air welded corner flashing at interior and exterior corners.

E. Hot-air weld flashings at their joints and at their connections with the roof membrane.

F. Provide additional securement for flashings that exceed 30 inches in height. Consult Manufacturer's Technical Department for securement methods.

G. Seal off Polymer Clad sheet metal incorporated into the roofing system with a hot-air welded stripping ply. Extend stripping ply four inches beyond sheet metal onto roof membrane and fit closely to edge of sheet metal.

H. At expansion joints, extend flashing membrane over joint and oversized backer rod and allow for expansion.

I. Roof Drain:

1. Mechanically attach membrane 6 inches on center into structural deck around drain sump. Adhere flashing membrane and hot-air weld to membrane a minimum of 4 inches.
2. Set flashing membrane in bed of sealant under the clamping ring.
3. Refer to Section 22 14 26 - Roof Drains.

J. Soil Pipe/Pipe Penetration:

1. Provide manufacturer's prefabricated pipe boot as shown in detail drawing.
2. Apply aluminum tape to penetration if asphalt contamination is present.
3. Hot-air weld horizontal flashing membrane a minimum of four inches onto the membrane.
4. Adhere vertical flashing membrane adhered to pipe penetration and extend a minimum of 1.5 inches horizontal at the base of penetration. Hot-air weld vertical flashing membrane to horizontal flashing membrane.
5. Install stainless steel draw band and sealant or hot-air weld flashing cap to terminate top edge of pipe flashing.

3.6 HOT-AIR WELDING OF SEAM OVERLAPS

A. General

1. Hot-air weld seams.
 - a. Minimum 3-inch-wide membrane overlap when automatic machine-welding.
 - b. Minimum 4-inch-wide membrane overlap when hand-welding, except for certain details.
 - c. Minimum width of hot-air weld is 1-1/2 inches.
 - d. Provide wider membrane overlaps or width of welds as required by the roof membrane manufacturer.
2. Provide welding equipment by or approved by the membrane manufacturer. Mechanics intending to use the equipment to have successfully completed a training course provided by a membrane manufacturer's technical representative prior to welding.
3. Clean and dry membrane to be hot-air welded.

B. Hand-Welding

1. Complete hand-welded seams in two stages. Allow hot-air welding equipment to warm up prior to welding.
2. Weld the back edge of the seam with a narrow but continuous weld to prevent loss of hot air during the final welding.
3. Insert nozzle into the seam at a 45-degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow," the hand roller is positioned perpendicular to the nozzle and pressed lightly. For straight seams, the 1-1/2 inch wide nozzle is recommended for use. For corners and compound connections, the 3/4 inch wide nozzle is recommended for use.

C. Machine Welding

1. Machine welded seams are achieved by the use of automatic welding equipment. When using this equipment, follow instructions from the manufacturer and local codes for electric supply, grounding and over current protection. Dedicated circuit house power or a dedicated portable generator is recommended. Do not operate other equipment off the generator.
 2. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.
- D. Quality Control of Hot-Air Welded Seams
1. Check hot-air welded seams for continuity using a rounded screwdriver. Visible evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark grey material from the underside of the top membrane. Provide on-site evaluation of welded seams daily and to locations as directed by the Engineer or membrane manufacturer's representative.
 2. Take 1-inch-wide cross-section samples of hot-air welded at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Patch test cut areas.

3.7 WALKWAY PAD INSTALLATION

- A. Check membrane seams that are to be covered by walkway pad with rounded screwdriver and repair deficiencies prior to walkway pad installation.
- B. Clean and dry roof membrane to receive walkway pad.
- C. Place chalk lines on sheet to indicate location of Walkway.
- D. Apply a continuous coat of membrane adhesive to the sheet and the back of walkway pad in accordance with membrane manufacturer's technical requirements and press walkway pad into place with a water-filled, foam-covered lawn roller.
- E. Clean the membrane in areas to be welded. Hot-air weld perimeter of the walkway to the roof membrane.
- F. Check welds with a rounded screwdriver. Repair deficiencies.
- G. Provide walk pads where indicated in Contract Drawings and at the following locations:
 1. Around roof hatches.
 2. At base and top of fixed wall access ladders.
 3. Around HVAC units.
 4. At door access to roof areas.

3.8 TEMPORARY CUT-OFF

- A. Install flashings concurrently with the membrane in order to maintain a watertight condition as the work progresses.

- B. When a break in the day's work occurs in the central area of the project, install a temporary watertight seal. Provide an 8-inch strip of flashing membrane welded 4 inches to the field membrane. Seal the remaining 4 inches of flashing membrane to the deck or the substrate so that water can not travel under the membrane. Seal the edge of the membrane with a continuous, heavy, 6 inch width application of pourable sealer. When work resumes, remove the contaminated membrane. Do not reuse these materials.
- C. If inclement weather occurs while a temporary water stop is in place, monitor the situation to maintain a watertight condition.
- D. If water is allowed to enter under the completed system, replace the affected area.

3.9 CLEANING

- A. Ensure trash and debris is removed from the roof daily.
- B. Keep metal scraps, nails, screws and other sharp damaging debris off of the roof membrane surface during construction.
- C. Clean off/remove excess adhesive, sealant, stains and residue on the membrane and flashing surfaces.
- D. Remove temporary coverings and masking protection from adjacent work areas upon completion.

3.10 PROTECTION

- A. Protect the roof from construction related damages during the Work.
- B. Replace damaged membrane, flashings and other membrane components. Repair in accordance with the membrane manufacturers repair instructions to comply with the specified warranty.

END OF SECTION 07 54 00

SECTION 07 62 00

SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Sheet metal flashings and trim to provide a permanently watertight condition.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and the following Specification Sections, apply to this Section:
 - 1. Section 06 10 00 - Rough Carpentry
 - 2. Section 07 41 13 - Metal Wall Panels
 - 3. Section 07 54 00 - Thermoplastic Single Ply Roofing

1.3 REFERENCE STANDARDS

- A. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems; 2022.
- B. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications; 2024b.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2018 (Reapproved 2024).
- D. NRCA (RM) - The NRCA Roofing Manual; 2025.
- E. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.
- B. Manufacturer's Instructions: Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Shop Drawings: For any transitions and/or terminations not depicted in Contract Drawings.
- D. Test Reports: Submit test reports for edge metal indicating resistance of specified wind uplift pressures.
- E. Color Charts:
 - 1. Pre-finished Sheet Metal

2. Polymer Clad Sheet Metal

3. Sealants

1.5 MOCK-UPS

- A. Provide mock-ups of the following sheet metal components prior to fabrication of the components. Mock-ups can be part of perma:
 - 1. Coping: Provide minimum 10-foot length of coping mock-up including applicable fascia covers. Include at least one seam of the configuration specified.
 - 2. Gutter: Provide mock-up of gutter, gutter bracket and gutter hanger. Include one lap in gutter section.

1.6 QUALITY ASSURANCE

- A. Install in accordance with the Contract Drawings.
- B. Ensure work is free of leaks.
- C. Provide metal edge and coping fabricated and tested in accordance with ANSI/SPRI/FM 4435/ES-1 to resist the specified wind uplift pressures.
 - 1. Fabricate metal edge and coping as shown in Contract Drawings and following NRCA (RM) tested details.
- D. Provide sheet metal flashing and trim in accordance with SMACNA (ASMM).
- E. Provide first-class workmanship. Assemble and secure sheet metal work in accordance with these specifications, roof system manufacturer's requirements and referenced standards.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials in the manufacturer's original sealed and labeled containers and in quantities required to allow continuity of application.
- B. Storage: Store materials within areas designated by the Owner. Ensure materials remain dry, covered and not in contact with the ground.
- C. Handling: Handle material in such manner as to preclude damage and contamination with moisture or foreign matter.

1.8 PROJECT CONDITIONS

- A. Environmental: Protect building and its components from the elements.
- B. Coordination and Scheduling: Coordinate phases of work to allow continuity of work without delays.

1.9 WARRANTY

- A. Provide pre-finished sheet metal manufacturer's thirty (30) year finish warranty from the date of substantial completion.
- B. Provide certification of air-dried kynar paint or powder coating for specified materials.

- C. Equipment Support Curb: Manufacturer's standard 5-Year limited Warranty against defects in labor and workmanship.

PART 2 PRODUCTS

2.1 PRIMARY SHEET METAL

- A. Material: Pre-finished Galvalume
 - 1. 24-gauge, galvalume coated steel meeting or exceeding AZ50 per ASTM A792. Manufacturer's smooth finish, pre-finished color coatings consisting of 70% Kynar 500 fluorocarbon (Polyvinylidene Fluoride PVF2) coating over a urethane primer on the finish side, with primer and a wash coat on the reverse. Measurements per NCCA Technical Bulletin II-4 or ASTM D1005. Protect the finish during fabrication and installation with a strippable plastic film. Manufacturer's standard color selected by Owner.
- B. Components:
 - 1. Slip Flashing
 - 2. Receiver Flashing
 - 3. Counterflashing
 - 4. Coping
 - 5. Continuous Cleat (use one gauge thicker than primary sheet metal): 22-gauge, galvalume coated steel

2.2 STAINLESS STEEL FLASHINGS

- A. 26-gauge, Type 304, 2B as tested in accordance with ASTM A240/A240M.
 - 1. Multiple Pipe Enclosure Components
 - a. Pipe Enclosure Flashing
 - b. Closure Cap
 - 2. Splash Pan

2.3 POLYMER CLAD METAL

- A. Heat-weldable, 24 gauge, AISI G90 galvanized steel sheet with an unsupported 20-mil thermoplastic membrane coating to match the flashing membrane composition laminated on one side, manufactured by, and included in the roof membrane manufacturer's warranty. Color selected by Owner.
 - 1. Flange/Sleeve
 - 2. Base Flashing Closure

2.4 FASTENERS

- A. Roofing Nails: Minimum 12-gauge stainless steel ring shank roofing nails with diamond point, minimum 3/8 inch diameter head and length as required to penetrate substrate a minimum of 1-1/4 inches.
- B. Screws:
 - 1. Sheet metal to wood attachment (exposed): #12 stainless steel, 5/16 HWH with length to penetrate substrate a minimum of 1-1/2 inches. Provide with bonded EPDM washer or washer specified below. Factory painted heads to match the sheet metal color.
 - 2. Sheet metal to wood attachment (concealed): #10 stainless steel, low profile pancake head with length to penetrate substrate a minimum of 1-1/2 inches.
 - 3. Sheet metal to sheet metal attachment (exposed): 1/4 inch x 7/8 inch carbon steel, self-drilling point, self-tapping, zinc alloy hex head screws with bonded EPDM tubular washer under head of fastener; screw heads to match color of wall panel by means of factory applied coating. Factory painted heads to match the sheet metal color.
 - 4. Sheet metal to light gauge steel attachment (concealed): #14-13 DP1 stainless-steel low-profile pancake head of length as required for three threads to penetrate metal substrate or min. 1 inch penetration through wood substrates.
- C. Concrete and Masonry Anchors: 1/4 inch diameter metal-based expansion anchor with stainless steel pin of length to penetrate substrate a minimum of 1-1/2 inches. Factory painted heads to match the sheet metal color.
- D. Washers: Stainless steel with neoprene gasket backing.
 - 1. 9/16 inch diameter for use with #12 screws
 - 2. 5/8 inch diameter for use with 1/4 inch diameter concrete and masonry anchors.
- E. Rivets: #44 stainless steel rivets with stainless steel mandrel and factory painted head to match adjacent sheet metal. Length to properly fasten particular sheet metal components.

2.5 RELATED MATERIALS

- A. Expansion Joint Cavities:
 - 1. PVC Flashing: 20 mil corrosion resistant, waterproof PVC flashing.
 - 2. Compressible Insulation: Un-faced friction-fit fiberglass building insulation, cut to fit from 3-1/2 inch x 15 inch x 48 inch batts.
- B. Sealants:
 - 1. Silicone Sealant: One-component, non-sag, neutral cure, low-modulus, UV resistant, high performance silicone sealant meeting ASTM C920, Type S, Grade NS, Class 100/50, Use NT, M, G, A or O. Color to match sheet metal color selected by Owner. Acceptable Manufacturers include:
 - a. Dow 790 Building Sealant

- b. Pecora 890 NST Silicone
 - c. Sikasil-WS 290
 - d. Triangle Fastener Corporation Ultra 1000
- 2. Sealant Tape: Minimum 1/2 inch wide, non-skinning, butyl sealant tape.
- 3. Butyl Sealant: Gun grade, non-skinning, non-hardening, flexible blend of butyl rubber and polyisobutylene sealant.
- C. Aluminum Tape: Pressure-sensitive, 2 inch wide aluminum tape used as a separation layer between small areas of asphalt contamination and the membrane and as bond breaker under the metal edge cover plates.
- D. Solder: 80-20 lead-TIN alloy conforming to ASTM B32.
- E. Flux: Muriatic acid killed with zinc or an accepted brand of commercial soldering flux designed for use with 80-20 solder.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Coordinate with other work for correct sequencing of items.
- B. Ensure substrates are installed, secured and modified to accommodate sheet metal flashings.
- C. Report deficiencies associated with the sheet metal substrates to Engineer before beginning sheet metal work. Correct deficiencies before installing sheet metal flashings.

3.2 INSTALLATION

- A. General:
 - 1. Lock and seal joints of pre-finished sheet metal.
 - 2. Solder joints of stainless steel flashings.
 - 3. Provide for thermal movement (expansion and contraction) of sheet metal.
 - 4. Where dissimilar metals contact, prevent galvanic action by means of heavy coat of asphalt primer or separate with sheet metal underlayment.
 - 5. Prime sheet metal surfaces (top and bottom) to receive bituminous materials. Allow primer to dry before application of bituminous materials.
 - 6. Install metal flanges on top of membrane, adhere and fasten as indicated in detail drawings, specified herein, and in accordance with membrane manufacturer's requirements.
 - 7. Provide uniform sheet metal sections with corners, joints and angles mitered, sealed and secured.
 - 8. Hem (return) exposed edges for strength and appearance.

9. Fit sheet metal close and neat.
 10. Provide cleats or stiffeners and other reinforcements to make sections rigid and substantial.
 11. Fabricate, support, cleat, fasten and join sheet metal to prevent warping, "oil canning", and buckling.
- B. Sheet Metal Laps (unless otherwise indicated):
1. Notch and lap ends of adjoining sheet metal sections not less than 4 inches; apply sealant tape or two bead of butyl sealant between sections.
 2. Lap miters at corners a minimum of 1 inch and apply sealant between laps. Rivet at 2 inches on center.
- C. Polymer Clad Sheet Metal:
1. Secure flanges of polymer clad sheet metal into roof deck at 12 inches on center.
- D. Fasteners:
1. Size and type required.
 2. Fasteners compatible with materials being joined.
 3. Exposed Fasteners:
 - a. Install screws with 5/16-inch predrilled, oversized holes.
 - b. Install Concrete and Masonry Anchors with 1 1/32-inch predrilled, oversized holes.
 - c. Exposed horizontal surface fasteners are not acceptable.
- E. Roof Drain:
1. Provide roof drain flashing as indicated in detail drawing.
 2. Install roof drain flashing in sealant around entire drain bowl.
 3. Strip-in flashing as specified.
- F. Overflow Roof Drain:
1. Provide overflow roof drain flashing as indicated in detail drawing.
 2. Install overflow roof drain flashing in sealant around entire drain bowl.
 3. Strip-in flashing as specified.
- G. Flange/Sleeve
1. Fabricate flange/sleeve as shown in detail drawings and to fit tightly to pipe penetration.
 2. Provide hot-air welded stripping membrane over seams.

3. Strip in flange as specified.
- H. Multiple Pipe Enclosure:
1. Fabricated pipe enclosure flashing and closure cap as shown in detail drawings. Refer to SMACNA (ASMM) Figure 8-8B or 8-9A depending upon direction of pipes.
 2. Secure pipe enclosure flashing and cap as indicated in detail drawings.
 3. Clean and solder seams of enclosure and cap.
- I. Slip Flashing:
1. Fabricate at curbs as shown in detail drawings in 10 foot lengths.
 2. Extend a minimum of 2 inches below base flashing termination and fit tightly against curb.
 3. Secure at 12 inches on center of a minimum of two fasteners per side of the curb. If slip flashing is located within Corner (Zone 3) secure at 6 inches on center maximum.
- J. Receiver Flashing:
1. Fabricate receiver flashing as shown in detail drawings in 10 foot lengths.
 2. Attachment:
 - a. Install receiver flashing to hat channel 12 inches on center. If receiver flashing is located within Corner (Zone 3) secure at 6 inches on center maximum.
 3. Install receiver flashing with slope to shed water.
- K. Counterflashing:
1. Fabricate counterflashing as shown in detail drawings in 10 foot lengths.
 2. Install counterflashing as indicated in detail drawings and secure to receiver flashing 12 inches on center. If counter flashing is located within Corner (Zone 3) secure at 6 inches on center maximum.
 3. Stagger receiver anchors with counter flashing fasteners.
 4. Extend counter flashing a minimum of 1.5 inches below base flashing termination.
- L. Wall Expansion Joint:
1. Install compressible insulation in PVC flashing envelope.
 2. Install oversized backer rod and PVC flashing membrane as indicated in Contract Drawings.
- M. Coping:

1. Fabricate coping in 10 foot lengths. Fabricate coping a maximum of 1/2 inch wider than the width of the wall; field verify parapet wall width prior to sheet metal fabrication.
 2. Install continuous cleat fastened to substrate 6 inches on center in vertical leg. Locate fasteners no greater than 2 inches from the bottom hem.
 3. Lock outside face of coping onto continuous cleat and secure inside face as follows:
 - a. For coping widths up to and including 12 inches, secure with screws through waterproof washers and oversized holes at 18 inches on center.
 - b. For coping widths greater than 12 inches, secure inside face with continuous cleats. Secure cleat through vertical face of cleat to blocking with fasteners at 6 inches on center. Locate fasteners no greater than 2 inches from the bottom hem.
 4. Coping Seams: Provide 1 inch high single lock standing seam at adjoining coping sections. Provide sealant on both sides of 1 inch turn up for standing seam. Refer to SMACNA (ASMM) Figure 3-2, type 22.
 5. Provide one-piece coping section at corners, four-way intersections and tee intersections. Locate joints within 24 inches from inside corner.
 6. Turn coping ends up a minimum of 2 inches at elevation walls and cover termination with surface mounted counterflashing.
- N. Splash Pans:
1. Where downspouts discharge onto roof; provide splash pans on 18 inch by 30 inch walk pads.
 2. Fabricate splash pans to meet SMACNA (ASMM) Figure 1-36, Alternate Section with 2 v-grooves.
- O. Base Flashing Closure:
1. Install closures where base flashings abruptly end.
 2. Hot-air weld joints watertight.
 3. Install closures over membrane and under finish ply of base flashing.
 4. Extend closures up under counterflashings or copings.
 5. Install closures to seal ends of base flashings, membrane and cants as well as end joints of edge metal.

3.3 CLEANING AND PROTECTION

- A. Clean sheet metal work of asphalt, flux, scrapes and dust.
- B. Replace sheet metal components with scratches through the metal finish.

END OF SECTION 07 62 00

SECTION 22 14 26

ROOF DRAINS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Water test of below grade storm drain leaders and roof drains.
 - 2. Replacement of existing roof drain components.
 - 3. Replacement of existing overflow roof drain components.

1.2 RELATED SECTIONS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications sections apply to this section, including but not limited to:
 - 1. Section 07 01 50 - Preparation for Reroofing
 - 2. Section 07 22 16 - Roof Insulation
 - 3. Section 07 54 00 - Thermoplastic Single Ply Roofing
 - 4. Section 07 62 00 - Sheet Metal Flashing and Trim

1.3 REFERENCE STANDARDS

1.4 SUBMITTALS

- A. Product Data: Manufacturer's Product Data Sheets for materials specified certifying material complies with specified requirements.
- B. Manufacturer's Instructions: Latest edition of the Manufacturer's current material specifications and installation instructions.
- C. Shop Drawings: Include plans, elevations, sections and details.

1.5 QUALITY ASSURANCE

- A. Ensure plumbing systems and components are installed by licensed, qualified personnel.
- B. Ensure roof drains, couplings, piping, supports, fixtures, pipe hangers, fasteners, fittings, etc. are installed in compliance with the referenced plumbing code, and installed in accordance with the component manufacturer's published guidelines and instructions, and referenced standards.
- C. Field test completed storm drain systems as required by the referenced plumbing code.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Delivery: Deliver materials in the manufacturer's original sealed and labeled packaging.
- B. Storage: Store materials to prevent damage and not encumber Owner's operations.
- C. Handling: Handle materials in such a manner as to prevent damage and contamination.

1.7 PROJECT CONDITIONS

- A. Environmental Requirements:
 - 1. Install roof drains and associated plumbing during periods of no precipitation to prevent water from entering the building.
 - 2. Prevent damage to the building and contents during roof drain and associated plumbing installations.
 - 3. Comply with applicable rules and regulations of Authorities Having Jurisdiction pertaining to storm sewage systems.
 - 4. Flood test roof drain systems to verify functional operation prior to roof replacement operations and report deficiencies to Engineer and Owner.
- B. Protection:
 - 1. Ensure roof drainage systems remain in service and restore to operational before leaving the site.
 - 2. Protect building interior and exterior surfaces during construction.

PART 2 PRODUCTS

2.1 ROOF DRAINS

- A. Existing Roof Drains: Replace clamping ring and strainer dome to match existing drain manufacturer and model with cast iron clamping ring and strainer dome. Replace bolts with stainless steel clamping ring bolts. Restore threads as necessary using taps to ensure positive fastening; clean metal shavings, chips and debris before fastening clamping ring.
 - 1. Overflow Roof Drains: Meet the above requirements with a 2 inch high external water dam.

PART 3 EXECUTION

3.1 INSPECTION

- A. Conduct a pre-job conference including the Engineer, Contractor, and the Owner's representative prior to the installation of roof drains and associated piping and plumbing fixtures.
- B. Verify that conditions are acceptable to begin the installation.
- C. Inspect daily the plumbing installation to ensure conditions remain satisfactory.

3.2 PREPARATION

- A. Inspect building components and conditions before proceeding with plumbing installation.
- B. Where decking is cut for drains, inspect building interior for utilities, structural members and occupancy conditions to ensure conditions are satisfactory to proceed.
- C. Where decking is cut to install roof drains, provide minimum steel angle around perimeter of deck opening for additional deck support.
- D. Inspect the piping route and hanger attachment points to ensure conditions are satisfactory to install piping and associated plumbing fixtures for the completed drainage system.
- E. Route piping to maintain working spaces around electrical equipment by NEC.
- F. Do not route piping and fixtures to interfere with the service of in-place equipment and systems.
- G. Do not close off or obstruct streets, walks or other adjacent occupied facilities without permission from Owner, Engineer, and Authorities Having Jurisdiction.

3.3 DRAIN LEADERS AND ROOF DRAINS

- A. Prior to commencement of work on the project inspect for damage and water flow.
 - 1. Clean drains of accumulated debris and loose gravel.
 - 2. Clean drain bowl and drain outlet of bitumen build-up to bare metal by hand scraping.
 - 3. Power vacuum debris, loose gravel, and bitumen scraping down to the first elbow in the drain line.
 - 4. After cleaning bitumen from the drain bowl, inspect the bowl carefully for cracks, and the drainpipe connection for possible deterioration.
 - 5. Flood test to determine that there are no plumbing leaks unrelated to the existing roof system and to verify proper function and flow.
 - a. Perform at each roof drain.
 - b. Plug drain leader below drain bowl to vertical leader connection.
 - c. Provide 4' square barrier around drain as necessary to contain water centered over drain.
 - d. Pond water to depth of 2 inches above the roof surface for a period of 24 hours. Inspect for leaks.
 - e. Remove plug and inspect for leaks.
 - 6. Complete inspection and testing prior to roofing tear-off. If deficiencies or damages are observed, record the deficiency on a Roof Plan and forward to the Engineer. The Engineer will notify the Owner accordingly. Allow 48 hours after notification for corrective work by the Owner.

7. If no deficiencies or damages are reported to the Owner prior to commencement of work, assume responsibility for the condition and operation of the leaders and drains including the connection between the roof drain and associated plumbing/leaders.
- B. Install temporary drain plugs during roofing activities to prevent foreign materials from entering drainage system. Remove drain plugs at the end of each workday to maintain drains in operational condition.
- C. Reinstall clamping rings, bolts and strainer domes at the end of each working day.
- D. Repair drain piping clogged by construction debris at no cost to the Owner.
- E. Repair leaks associated with damage, following successful flood testing, to the roof drain connection to associated plumbing at no cost to the Owner.
- F. Roof drain lowering:
 1. Inspect drain bowls for elevation relative to top surface of roof deck.
 2. Remove vertical portion of drain leader and lower bowl so flange is located where indicated in Contract Drawings.

3.4 CLEANING

- A. Clean interior of piping of dirt and superfluous materials. Flush with potable water.

END OF SECTION 22 14 26