

BIDDING & CONSTRUCTION DOCUMENTS
MARCH 10TH, 2026

PROJECT MANUAL

FOR

West Des Moines Community School
(WDMCS) District
Valley Southwoods
Roofing Replacement

625 s 35th St
West Des Moines, Iowa 50265

OWNER

West Des Moines Community School District
3550 Mills Civic Parkway, West Des Moines, Iowa 50265

ARCHITECT

Studio Melee
139 4th Street, West Des Moines, Iowa 50265



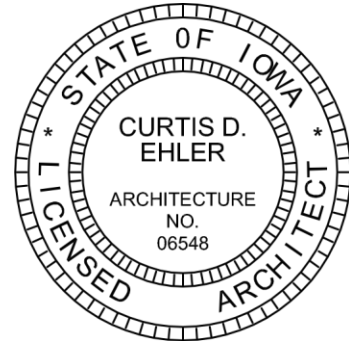
**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**SEALS & CERTIFICATION
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ARCHITECT'S CERTIFICATION:

I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly licensed architect under the laws of the state of Iowa.


Curtis D. Ehler, AIA 06548 March 10th, 2026
License # Date



END OF SECTION 000100

**WEST DES MOINES COMMUNITY
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**SEALS & CERTIFICATION
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SECTION 000110 – LIST OF DRAWINGS

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END OF SECTION 000110

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**NOTICE OF PUBLIC HEARING
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DOCUMENT 000115 - NOTICE OF PUBLIC HEARING

Notice of Public Hearing

Notice is hereby given that the West Des Moines Community School (WDMCS) District will hold a Public Hearing on the proposed Plans, Specifications, Form of Contract, and Estimate of Costs for the construction of the WDMCS Valley Southwoods Roofing Replacement Project, pursuant to Iowa Code Chapter 26.12. The Public Hearing will be held at the school Board's normally scheduled meeting at 7:00pm (Central Time) on March 9th, 2026, in the WDMCS Learning Resource Center, located at 3550 Mills Civic Parkway; West Des Moines, Iowa 50265. Any interested individuals may appear, express views, and file objections, both orally and in writing, to the proposed Plans, Specifications, Form of Contract, and Estimate of Costs.

Project Description

The Project includes the following Membrane/Metal System Roof Replacement Projects at Valley Southwoods, located at 625 S 35th St; West Des Moines, Iowa 50265.

1. Tear off and replacement of existing roofing system with new vapor barrier, insulation, coverboard, and membrane roofing assembly. New assembly will include a thirty (30) year manufacturer's warranty & five (5) year contractor installation warranty.
2. Tear off and replacement of existing roofing system with new underlayment, insulation, cover board, and standing seam metal roofing assembly. New assembly will include a thirty (30) year manufacturer's warranty, manufacturer's thirty-five (35) year finish warranty, & five (5) year contractor installation warranty.
3. All sheet metal copings, flashings, edge, fascia, boots and related accessories will be removed and replaced with new finished metal. Manufacturer's thirty-five (35) year finish warranty shall be included for these components.

Valley Southwoods = Approximately 38,089 square feet of roofing replacement.

Time for Commencement and Completion of the Project

The Project site will be available to commence work starting on or about May 25th, 2026. The work shall be substantially completed by July 31st, 2026, and final completion on or before August 14th, 2026.

Notice published and posted this 23rd day of February 2026, by order of the Board of West Des Moines Community School District, located in West Des Moines, Iowa.

END OF DOCUMENT 000115

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**NOTICE OF PUBLIC HEARING
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**WEST DES MOINES COMMUNITY
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**NOTICE OF BID LETTING
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DOCUMENT 000120 - NOTICE OF BID LETTING

Notice of Bid Letting

Notice is hereby given that bids for the WDMCS Valley Southwoods Roofing Replacement Project will be accepted for review and consideration by the West Des Moines Community School (WDMCS) District, pursuant to Iowa Code Chapter 26.

Time and Place for Filing and Opening of Sealed Bid Proposals

Sealed bid proposals will be received by the WDMCS District until 3:00pm (Central Time) on April 1st, 2026, in the WDMCS Learning Resource Center, located at 3550 Mills Civic Parkway; West Des Moines, Iowa 50265 for the project described below. Bid Proposals will be opened and read aloud at that time. Only single bid proposals for General Construction will be accepted. Proposals received after the deadline for submission as stated herein shall not be considered.

Time and Place Bid Proposals will be Considered

Bid Proposals will be considered and acted upon by the WDMCS District at the school Board's normally scheduled meeting at 7:00pm (Central Time) on April 13th, 2026 (or at such later time and place as may then be fixed), in the WDMCS Learning Resource Center, located at 3550 Mills Civic Parkway; West Des Moines, Iowa 50265.

Project Description

The Project includes the following Membrane/Metal System Roof Replacement Projects at Valley Southwoods, located at 625 S 35th St; West Des Moines, Iowa 50265.

1. Tear off and replacement of existing roofing system with new vapor barrier, insulation, coverboard, and membrane roofing assembly. New assembly will include a thirty (30) year manufacturer's warranty & five (5) year contractor installation warranty.
2. Tear off and replacement of existing roofing system with new underlayment, insulation, cover board, and standing seam metal roofing assembly. New assembly will include a thirty (30) year manufacturer's warranty, manufacturer's thirty-five (35) year finish warranty, & five (5) year contractor installation warranty.
3. All sheet metal copings, flashings, edge, fascia, boots and related accessories will be removed and replaced with new finished metal. Manufacturer's thirty-five (35) year finish warranty shall be included for these components.

Valley Southwoods = Approximately 38,089 square feet of roofing replacement.

Time for Commencement and Completion of the Project

The Project site will be available to commence work starting on or about May 25th, 2026. The work shall be substantially completed by July 31st, 2026, and final completion on or before August 14th, 2026.

Documents

The Contract Documents, including Plans, Specifications, and Form of Contract will be available at qualified plan rooms and at the Iowa Reprographics Online Plan Distribution website (iowarepro.com/plan-distributions). Physical copies are available at the Iowa Reprographics

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**NOTICE OF BID LETTING
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Print Shop, located at 3 College Avenue, Suite 3; Des Moines, Iowa 50314. Qualified plan houses receive sets free of charge, provided they log all usage of the documents and return them, in a reusable condition, within fourteen (14) days after award of the project. Sets are available to bidding contractors for a deposit of \$200.00 USD, which shall be refunded, provided that the documents are returned, in a reusable condition, within fourteen (14) days after award of the project. If the Plans, Specifications, and Form of Contract are not returned in a timely manner or in a reusable condition, the deposit shall be forfeited.

Bid Security

Bid Proposals must be accompanied by a bid security of five (5) percent (%) of the total amount of the proposal from bid bond, cashier's check or certified check in the same amount. The certified of cashier's check shall be drawn on a bank in Iowa or a bank chartered under the laws of the United States of America or the certified share draft shall be drawn on a credit union in Iowa or chartered under the laws of the United States and payable to the WDMCS District. The bid security shall be provided to the WDMCS District as security that if the bidder is awarded the contract, the bidder will enter into a contract on the form provided by the WDMCS District at the price bid and shall furnish the required performance bond, payment bond and Certificate of Insurance. If the bidder fails to execute the contract and to furnish an acceptable performance bond, payment bond or Certificate of Insurance within ten (10) days after acceptance of the bid, the bid security may be forfeited or cashed by the WDMCS District as liquidated damages.

Bidder's Qualifications

Bidders must be properly licensed under the laws governing their respective trades. Bidders may be required to provide evidence of experience with similar project types of similar scale. The Board of West Des Moines Community School District reserves the right to conduct such investigations as it deems necessary to assist in evaluation of bid proposals and to establish the responsibilities, qualifications, experience, number of employees, and financial abilities of the proposed bidders, subcontractors, suppliers or other organizations. The West Des Moines Community School District may require submission of AIA Document A305, Contractor Qualification Statement, at its discretion to the apparent low bidder. By virtue of statutory authority, preference will be given to products and provisions grown and coal or other materials produced within the State of Iowa, and to Iowa domestic labor.

Pre-Bid Meeting and Walkthrough

A Pre-Bid Meeting for all bidders will be held on March 23rd, 2026 at 3:00pm (Central Time) at the WDMCS Valley Southwoods, located at 625 S 35th St; West Des Moines, Iowa 50265. Prospective bidders are requested to attend; however, the meeting is not mandatory.

1. Bidders questions: For additional information, contact Alex DuToit, AIA with Studio MELEE by phone at (515) 422-4958 or by email at alex@studiomelee.com.
2. The Architect will provide responses to any questions and publish them via addenda.

Iowa State Sales Tax

The West Des Moines Community School District of West Des Moines, Iowa is exempt from paying Sales and Use Tax. Do Not include Iowa State Sales Tax in any calculation of Bid totals. The West Des Moines Community School District will supply Contractor with an "Iowa Sales Tax

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**NOTICE OF BID LETTING
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Exemption Certificate” and an authorization letter to allow the Contractor to buy equipment and material for the Project without paying Sales and Use Tax.

All bidders must provide a statement regarding the bidder’s resident status. This statement shall be on the Bidder Status Form designated by the Iowa Department of Labor commissioner. The statement must be signed by an authorized representative of the bidder. Failure by any bidder to submit a fully completed Bidder Status Form with the bid may result in the bid being deemed non-responsive and rejected.

Basis of Bids

The Bidder shall include all requested Forms and attachments with their submission of the Bid Form; failure to comply may be cause for rejection. Consideration of bids and the award of contract may be made by the Owner to the lowest responsive, responsible bidder determined on the basis of a combination of the base bid and any selected alternates. The right is reserved to reject any and all bids, or any part thereof, and to waive informalities, technicalities or irregularities as allowed by law. The right is reserved to hold and consider the bids for 45 days after the date of bid opening, and to enter into such Contract or Contracts as shall be deemed in the best interests of the West Des Moines Community School District.

All bids will be governed by applicable provisions in the Iowa Code and Board Policies including its Non-Discrimination Equal Employment Opportunity and Affirmative Action Policy.

Notice published and posted this 9th day of March 2026, by order of the Board of West Des Moines Community School District, located in West Des Moines, Iowa.

END OF DOCUMENT 000120

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**NOTICE OF BID LETTING
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DOCUMENT 000200 - INSTRUCTIONS TO BIDDERS

1.1 GENERAL

- A. The West Des Moines Community School District “Owner,” has posted notice of public hearing and for Sealed Bid Proposals to be submitted for the work specified.
- B. To be considered, Bids must be made in accordance with these Instructions to Bidders and items included on the Bid Form.
- C. The State of Iowa, its agencies, and its political subdivisions, including cities, school districts and public utilities are required by Iowa Code Section 73A.21 to require a reciprocal Resident Bidder and resident labor force preference.
 - 1. A “Resident Bidder” means a person or entity authorized to transact business in the State of Iowa and having a place of business for transacting business within the state at which it is conducting and has conducted business for at least three years prior to the date of the first advertisement for the public improvement. If another state or foreign country has a more stringent definition of a resident bidder, the more stringent definition is applicable as to bidders from that state or foreign country.
 - 2. A Resident Bidder shall be allowed a preference as against a non-resident bidder from a state or foreign country other than Iowa if that state or foreign country gives or requires any preference to bidders from that state or foreign country, including but not limited to any preference to bidders, the imposition of any type of labor force preference, or any other form of preferential treatment to bidders or laborers from that state or foreign country. The preference allowed shall be equal to the preference given or required by the state or foreign country in which the non-resident bidder is a resident.

1.2 DEFINITIONS

- A. Bids are sums stipulated on the Bid Form, for which Bidders propose to perform the Work.
- B. Unit Prices are sums included on the Bid Form, as Bids per unit measure of materials and/or services, as required in the Bidding Documents, if requested by Owner.
- C. Sealed Bid Proposals are complete, properly executed Bid Forms, including all information requested by the Owner.
- D. Bidders are qualified contractors who submit Proposals to the Owner for Work as Prime General Contractors on the Project. Only Sealed Bid Proposals from a single general construction contractor will be accepted.

- E. Alternate Prices are lump sum prices included on the Bid Form for labor, materials and/or services that are not included in the base bid, if requested by Owner.
- F. Bids shall include all applicable costs associated with providing a free and clear product to the owner including, but not restricted to, taxes, crating, shipping costs, delivery to site and installation costs. Also included in the bid costs shall be all demolition and incidental removal of site materials.

1.3 DOCUMENTS

- A. The Contract Documents, including Plans, Specifications, and Form of Contract will be available at qualified plan rooms and at the Iowa Reprographics Online Plan Distribution website (iowarepro.com/plan-distributions). Physical copies are available at the Iowa Reprographics Print Shop, located at 3 College Avenue, Suite 3; Des Moines, Iowa 50314. Qualified plan houses receive sets free of charge, provided they log all usage of the documents and return them, in a reusable condition, within fourteen (14) days after award of the project. Sets are available to bidding contractors for a deposit of \$200.00 USD, which shall be refunded, provided that the documents are returned, in a reusable condition, within fourteen (14) days after award of the project. If the Plans, Specifications, and Form of Contract are not returned in a timely manner or in a reusable condition, the deposit shall be forfeited.

1.4 EXAMINATION OF SITE & DOCUMENTS

- A. Each Bidder shall visit the site of the proposed work and shall completely inform himself relative to construction hazards, procedure, labor, and all other conditions and factors, local and otherwise, which would affect prosecution and completion of the work and its cost. All visits to the site shall be coordinated through the Owner. Such considerations shall include, without limitations, the arrangement and condition of existing structures and facilities; the procedure necessary for maintenance of uninterrupted, safe operation, use and occupancy of existing facilities; the availability and cost of labor; and facilities for transportation, handling and storage of materials and equipment. All such factors shall be properly investigated and considered in the preparation of the bid.
- B. Each bidder shall so fully examine the plans and specifications and acquaint himself with their requirements and with the conditions surrounding the construction on the site that he shall be fully familiar with and informed of all facilities, difficulties, and problems associated with or which might be incurred in the prosecution of the work. In case of disagreement between drawings and specifications or within either document itself, the better quality or greater quantity of work shall be figured in the bid. It shall be the responsibility of the Bidder to direct the attention of the Architect and Owner in writing and at least seven (7) calendar days prior to the time set for the filing and opening of sealed bid proposals, any seeming inconsistencies, ambiguous requirements, omissions, or any other matter which seems to require explanation, and to request clarification.

- C. The submission of a Sealed Bid Proposal shall be taken as evidence of compliance with this requirement and as an acknowledgment that the Bidder has received all the required documents and has visited the site. There will be no subsequent financial adjustment for lack of such prior information.

1.5 QUESTIONS & INTERPRETATION

- A. No oral interpretations will be made by anyone to any Bidder as to the true meaning or requirements of any part of the drawings, specifications or other proposed Contract Documents. Every request for an interpretation shall be made in writing and addressed and forwarded to the Architect not later than seven (7) calendar days before the date fixed for the filing and opening of sealed bid proposals. The person submitting the request shall be responsible for its prompt delivery.
- B. Every interpretation made to a Bidder will be in the form of an addendum to the Contract Documents, which, if issued, will be sent as promptly as is practicable to all persons to whom the drawings, specifications, and other proposed Contract Documents have been issued. All such addenda shall become part of the Contract Documents and their receipt shall be acknowledged on the Bid Form. The Owner will not be responsible for any other explanations or interpretations of the proposed Contract Documents.

1.6 SUBSTITUTIONS

- A. Substitutions of products will be considered in accordance with 016300, and as follows.
- B. Where Bidding Documents stipulate a specific product, a substitute product will be considered when written request is received by Architect by date specified or as follows:
 - 1. Prior to the bid date, substitution requests will be considered if received no later than seven (7) calendar days before the date fixed for the filing and opening of sealed bid proposals. The approved products will be listed in Addenda. Any products not listed in Addenda should not be considered approved.
 - 2. If circumstances do not permit a request to be substituted prior to bid date, the proposed substitution may be submitted after the contract is awarded only under circumstances set forth in Section 016300. All substitution requests shall include the value of additions to or deductions from the contract amount, including the value of revisions to other work required to accommodate the substitution.
 - 3. Each request shall clearly describe the product for which approval is requested, and shall include all data necessary to demonstrate acceptability as outlined in Section 016300.

1.7 SUBMISSION OF SEALED BID PROPOSALS

- A. Bid Documents shall be enclosed in two separate envelopes (OUTER and INNER), each of which shall be sealed and clearly labeled as indicated below.
- B. The "OUTER" envelope shall be labeled "BID DOCUMENTS – OUTER ENVELOPE", along with the Project Name, Project Number (if applicable), Bidder Name, Bidder Address, and the Time of Opening Bids. The labels should be provided in prominent lettering so as to guard against opening prior to the stipulated time, and include:
 - 1. "INNER" envelope.
 - 2. Bid Security: Bid bond (executed by Bid Bond Form AIA Document A310-2010), cashier's check, or certified check.
 - 3. Non-Collusion Affidavit: See Document 000220.
 - 4. Bidder Status Form: See Document 000230.
 - a. Note that the Authorization to Transact Business Worksheet may be used to help complete Part A of the Resident Bidder Status Form. However, the Authorization to Transact Business Worksheet is not required to be included in either envelope.
- C. The "INNER" envelope shall be labeled "BID ENCLOSED – INNER ENVELOPE", and include:
 - 1. Bid Form: See Document 000210.
- D. If the "OUTER" envelope does NOT include the required bid documents indicated above, the "INNER" envelope will NOT be opened. No responsibility shall attach to any employee of the Owner for the premature opening of any bid not prominently identified.
- E. The bid documents shall be submitted at the time and location as noted in the Notice of Hearing and the Notice of Letting. Bids received after the specified time of closing will be returned unopened.
- F. Bids must be mailed or physically delivered. No faxed or emailed bids will be permitted.

1.8 WITHDRAWAL OF BIDS

- A. Any Bidder may withdraw his bid if written request for withdrawal signed in the same manner and by the same person who signed the Bid Form is received by the Owner prior to the time established for the opening of the bids.
- B. No Bidder may withdraw his bid for forty-five (45) calendar days after the scheduled time set for the opening thereof, or before award of the Contract, unless said award is delayed for a period exceeding forty-five (45) calendar days.

1.9 MODIFICATIONS

- A. No oral, telephonic, or telegraphic modifications will be considered.

1.10 ACCEPTANCE OF BIDS

- A. Bid opening will be a public letting and be read aloud.
- B. The Owner reserves the right to accept the bid which in its judgment is the most responsive responsible and best bid or to reject any and all bids and alternatives and to waive or disregard technicalities or irregularities in any bid as it may deem to be in the best interest of the Owner. The Owner or its designees may consider as irregular any bid on which there is an alteration of, or departure from, the Bid Form.
- C. Alternates will be selected as required to obtain the optimum facility possible within the available funds.
- D. Bid Proposals will be considered and acted upon by the WDMCS District at a school Board's normally scheduled meeting as noted in the Notice of Hearing and the Notice of Letting. The Board reserves the right to reject any or all bids, and to waive any or all technicalities or irregularities.

1.11 PREPARATION OF PROPOSAL FORMS AND BID FORMS

- A. All bid documents and bid forms must be prepared in single copy and in conformity with and be based upon and submitted subject to all requirements of the Contract Documents. They must be fully completed with all blanks appropriately filled in. Each bid shall be legibly written or printed in ink on the separate form provided. No alterations in bids, or in the printed forms therefore, by erasures, interpolations, or otherwise will be acceptable. No alteration in any bid, or in the form on which it is submitted, shall be made after the bid has been submitted.
- B. It will be the Bidder's responsibility to secure any and all addenda from the Online Distribution Plan Room listed above. The Bidder will be required to acknowledge receipt of all addenda. Owner reserves the right to reject any bid which is received which has not been based upon all addenda issued by the Architect.
- C. No Bidder may submit more than one bid. Multiple bids under different names will not be accepted from one firm or association.
- D. The Bidder is required to bid on all alternates and complete all blanks on the Proposal Form. If alternates are called for on a type or method of construction as to which the Bidder does not desire to bid, the Bidder shall insert the words "NO BID." In case the Bidder desires to bid on an alternate, it shall set forth in the space provided therefore, the amount to be added or deducted from the base bid or in the event that the Bidder does not desire to make a change from the base bid, it shall so indicate by using the words "NO CHANGE." In the selection of alternates, the Owner reserves the right to select or reject any or all alternates in the proposal if, in the judgment of the Board of Directors, or its designees, the best interest of the Owner will be so served.

- E. Proposal forms included in the specification may be copied and used for submitting Sealed Bid Proposals. Proposals shall be made upon the forms provided herein. Any Proposal NOT submitted on required forms may be rejected.
- F. Attention is directed to the fact that the Contract Documents contain various types of contract forms; these are sample forms and are included for the information of Bidders. They are not to be detached from the Contract Documents, filled out or executed until after Opening of Sealed Bid Proposals and Acceptance by the Owner.

1.12 SIGNATURE OF BIDDERS

- A. Each Bidder shall both Sign and Notarize the Bid Form, on the last page of the form, the Bid Security (if in the form of a Bid Bond), and the Non-Collusion Affidavit in the places indicated.
- B. Each Bidder shall sign the Bidder Status Form, on the last page of the form, in the place indicated.
- C. If the Bidder is an individual, the Bidder must sign in individual capacity. Bids by partnerships shall be signed with the partnership name followed by the signature and designation of one of the partners or other authorized representative. Bids by corporations shall be signed with the name of the corporation followed by the signature and designation of the president or other person authorized to bind the corporation and attested to by the secretary with corporate seal (if available). Bids by joint ventures shall be signed by each participant in the joint venture or by an authorized agent of each participant. The names of all persons signing should also be typed or printed below the signature. A bid by a person who affixes to his signature the word "president," "secretary," "agent," or other designation without disclosing his principal may be held to be the bid of the individual signing. When requested by the Owner, evidence of the authority of the person signing shall be furnished.

1.13 BID SECURITY

- A. Bid security in the amount of five (5) percent (%) of the Bid amount, shall be provided in the form of a bid bond, cashier's check, or certified check. Bid security shall be payable without condition or qualification to the West Des Moines Community School District, as evidence of good faith and as a guarantee that if awarded the contract, the Bidder will execute the Contract and give bond as required. The Bidder assumes all responsibility for furnishing acceptable bid security.
- B. Bid security in the form of a bid bond will be accepted only if from a regularly established firm licensed to write such surety in the State of Iowa.
- C. The bid security of each unsuccessful Bidder will be returned when the Agreement is fully executed with the accepted bidder. The bid security will be voided but retained by the Owner, if, after the Notice of Contract Award, the Bidder shall enter into an Agreement and file a satisfactory performance bond, payment bond and Certificates of Insurance, all within ten (10) calendar days after the date such notice is given by the

Owner. The bid security of the second and third lowest responsible Bidders may be retained for not to exceed forty-five (45) days after opening, pending the execution of the Construction Agreement and submission of bond by the successful Bidder.

- D. This bid security may be retained by the Owner as liquidated damages, if the bid is accepted and a contract thereon is awarded but the successful Bidder fails to enter into a contract in the form prescribed with legally responsible sureties, within ten (10) calendar days after date of Notice of Contract Award is given by the Owner.
- E. The Owner shall require the Bidder to whom a Contract is awarded to furnish to the Owner both Performance and Payment (Labor and Material) bonds in the amount of one hundred (100%) percent of the Contract price, covering the faithful performance of the Contract and the payment of all obligations arising thereunder, and the Bidder will further provide warranties as required by the specifications or General Conditions. Bidder shall include all costs for Performance and Payment (Labor and Material) bonds in the bid amount.
- F. The bonds shall be executed on the forms included within the Contract Documents. Accompanying each bond form shall be a "Power of Attorney" authorizing the attorney in fact to bind the surety company and certified to include the date of the bond.
- G. The cost of bonds shall be included in the proposed contract sum.

1.14 LIST OF SUBCONTRACTORS AND SUPPLIERS OF LABOR AND MATERIAL

- A. The bidder is specifically advised that any person, firm or other party to whom it is proposed to award a subcontract under this contract:
 - 1. Must be acceptable to the owner.
 - 2. Must comply with the Bidding Requirements, Conditions of the Contract, and the applicable technical specifications and drawings.
- B. The lowest bidder for each contract shall, within twenty-four (24) hours following the bid opening, provide the Owner with a signed List of Subcontractors and Suppliers of Labor and Material. Subcontractor is any entity performing 1-1/2% or more of the contract value.
- C. The List shall detail the quotations used in the preparation of the bid and whose services are proposed to be used in construction of the project. The List must be complete showing all sections in the Construction Documents. Failure to submit the List may preclude the bid from further consideration by the Owner. The Owner reserves the right to either disclose or not disclose the List of the successful Bidder.
- D. Each Bidder shall identify and fully disclose on the List all those subcontractors and suppliers proposed for the work with which the Bidder is connected either directly or indirectly as part owner, participant in profits and losses or in any other manner financially or economically.

1.15 BACKGROUND INFORMATION

- A. The lowest bidder for each contract shall, within twenty-four (24) hours following the bid opening, provide the Owner with the Background Information included in the Instructions to Bidders. The Contractor must complete and fully disclose all information requested in the Background Information. Failure to submit the Background Information may preclude the bid from further consideration by the Owner.
- B. The Owner may make such investigations as deemed necessary to determine the ability and qualification of the Bidder. Bidders shall submit within twenty-four (24) hours, if requested by the Owner, such evidence of the Bidder's competency and practical knowledge to do the particular work covered by his proposal and of the Bidder's financial responsibility, resources, experience, organization and equipment to complete the proposed work. Failure to comply with this requirement may result in the rejection of consideration of such bid.
- C. In determining the Bidder's qualifications, the following factors, among others, will be considered: work previously completed by the Bidder; the qualifications of the proposed subcontractors for their work; Bidder references; and whether the Bidder (a) maintains a permanent place of business; (b) has adequate plant and equipment to do the work properly and expeditiously; (c) has the financial resources to meet all obligations incident to the work; (d) has appropriate technical experience; and (e) has adequate, competent, experienced staff and supervisors who will be committed to the work until completion.
- D. Each Bidder may be required to show that he has handled former work and that no just claims have been prosecuted or are pending against such work. No bid will be accepted from a Bidder who is engaged on any work which would impair his ability to perform or finance this work or other work in progress.
- E. The Owner reserves the right to reject any bid if the Owner determines, in its sole and absolute discretion, that the Bidder is not properly qualified to carry out the obligations of the Contract and/or to complete the work contemplated by the contract. Conditional bids will not be accepted.

1.16 PERMITS AND FEES

- A. The Contractor shall secure and pay for the general building permit and associated inspection fees required for the execution of the work. Trade contractors will be responsible to obtain and pay for their specialty permits. The Owner may be exempt from paying certain fees and it will be the contractor's responsibility to acquaint themselves with the laws and regulations governing said fees. Attention is directed to the requirements of the General Conditions regarding obtaining permits.

1.17 TAXES

- A. The West Des Moines Community School District is considered a Designated Exempt Entity by the Iowa Department of Revenue. Suppliers or Subcontractors shall clearly state the EXCLUSION of Iowa Sales and Use Taxes as well as Local Option Sales Taxes (when applicable), as part of their quotations to the Bidding Contractor. Upon request, the Owner will provide subcontractors or suppliers with exemption certificates.

1.18 FORM OF AGREEMENT

- A. The agreement for the work will be written on Document 000600 Standard Form Contract Agreement, Exhibit A: Scope of Work, Exhibit B: Documents, Exhibit C: Special Terms and Conditions, and Exhibit D: Standard Terms and Conditions.
- B. Submission of a Sealed Bid Proposal indicates bidder's acceptance with said contract.

1.19 APPLICABLE LAWS AND REGULATIONS

- A. Each Bidder shall familiarize himself with all state and local laws, codes, ordinances, and regulations which might in any manner affect the work to be done; the materials to be supplied; the taxes, permits and fees to be paid; or the labor to be employed in and about the work. Any claim of misunderstanding or ignorance on the part of any successful Bidder will not in any way excuse such Bidder from the necessity of full compliance with every such law, code, ordinance, or regulation. All state laws, codes and regulations and local ordinances, which are applicable, shall be complied with including but not limited to those specified in these documents.

1.20 POST-BID INTERVIEWS

- A. Bidders in contention for contract awards may be asked to attend Post-Bid Interviews, submit Post-Bid Submittals in rough draft for review.

END OF SECTION 000200

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**INSTRUCTIONS TO BIDDERS
Section 000200 - Page 10**

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**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**BID FORM
Section 000210 - Page 1**

DOCUMENT 000210 – BID FORM

PROJECT NAME: WDMCS Valley Southwoods Roofing Replacement
Valley Southwoods Freshman High School
625 S 35th St
West Des Moines, Iowa 50265

DELIVER BID TO: West Des Moines Community School District
3550 Mills Civic Parkway
West Des Moines, Iowa 50265

SUBMITTED BY: _____
(Name of Bidder / General Contractor)

Board Members of the West Des Moines Community School District:

The undersigned has carefully examined the site, the proposed Contract Documents prepared by Studio MELEE pertinent to the construction of the above referenced Project. Further, being familiar with all other conditions affecting the Work, the undersigned hereby proposes and agrees to furnish and provide all labor, materials, supervision, transportation, tools, equipment, services and other facilities necessary and required for the expeditious completion of the Work indicated above in strict conformity with said conditions and Contract Documents.

The undersigned has reviewed the work outlined in the Bidding Documents and fully understands the scope of work required in this Proposal. The undersigned acknowledges that the Proposal includes the work of all trades required for the work and understands the Owner Representative function as described in the Contract Documents. The undersigned understands that each bidder who is awarded a Contract shall be in fact a Prime Contractor, not a Subcontractor. The undersigned agrees that the proposal, if accepted by the Owner, will be the basis for a contract with the Owner to enter into such a contract in accordance with the intent of the Contract Documents.

Enclosed in a separate “OUTER” envelope is a Bid Security for five percent (5%) of the amount of the Base Bid, a Non-Collusion Affidavit, and a Bidder Status Form. The Bid Security is to be left in escrow with the Owner as a guarantee that the undersigned will enter into a Contract and will furnish the specified insurance and bonds. The undersigned has notified the Owner Representative of any discrepancies or omissions, or of any doubt about the meaning of any of the Contract Documents, and has contacted the Owner Representative before bid date to verify the issuing of any clarifying Addenda.

The undersigned agrees to complete the work required, within the timeline indicated in the Contract Documents.

(Name of Bidder / General Contractor)

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**BID FORM
Section 000210 - Page 2**

ADDENDA (if applicable):

The undersigned further acknowledges receipt of the following Addenda:
(Bidder must acknowledge All Addenda issued)

NO. _____ DATE _____

NO. _____ DATE _____

NO. _____ DATE _____

BASE BID:

Base Bid Amount: _____ Dollars (\$ _____)

The undersigned proposes to provide and construct the Work required, in accordance with said Contract Documents for the lump sum price indicated above and agrees to complete the work in accordance with the schedule requirements to achieve Substantial Completion no later than the date indicated in Section 000300.

ALTERNATES:

NONE

UNIT PRICES:

UNIT PRICE #1:

The undersigned proposes to provide additional hourly rate in dollars per hour (\$/hr) for contractor labor for the price of: _____ Dollars (\$ _____) per hour.

UNIT PRICE #2:

The undersigned proposes to provide additional cost per square foot (\$/sf) for the replacement of metal roof deck for the price of: _____ Dollars (\$ _____) per square foot.

UNIT PRICE #3:

The undersigned proposes to provide additional cost per square foot (\$/sf) for the replacement of plywood sheathing for the price of: _____ Dollars (\$ _____) per square foot.

UNIT PRICE #4:

The undersigned proposes to provide additional cost per square foot (\$/sf) for the replacement of exterior gypsum soffit for the price of: _____ Dollars (\$ _____) per square foot.

(Amounts shown in Base Bid, Alternates, and Unit Prices above shall be shown in both words and figures. In case of discrepancy, the amount shown in words shall govern).

(Name of Bidder / General Contractor)

LIST OF SUBCONTRACTORS AND SUPPLIERS OF LABOR AND MATERIAL

The lowest bidder for each contract shall, within twenty-four (24) hours following the bid opening, provide the Owner with a signed List of Subcontractors and Suppliers of Labor and Material. Subcontractor is any entity performing 1-1/2% or more of the contract value.

The List shall detail the quotations used in the preparation of the bid and whose services are proposed to be used in construction of the project. The List must be complete showing all sections in the Construction Documents. Failure to submit the List may preclude the bid from further consideration by the Owner. The Owner reserves the right to either disclose or not disclose the List of the successful Bidder.

Each Bidder shall identify and fully disclose on the List all those subcontractors and suppliers proposed for the work with which the Bidder is connected either directly or indirectly as part owner, participant in profits and losses or in any other manner financially or economically.

AGREEMENT

It is understood and agreed that if written notice of the Owner's acceptance of this proposal is mailed, telegraphed, or delivered to the undersigned after the opening of the bid, and within ten forty-five (45) days after acceptance of the bid, the undersigned will execute and deliver to the Owner an Agreement in accordance with the bid as accepted. The undersigned will also furnish and deliver to the Owner the performance bond, payment bond, and Certificates of Insurance as specified in the Contract Documents, all within ten (10) working days after receipt of Notice of Contract Award. The work under the Contract shall be commenced by the undersigned bidder, if awarded the Contract, on the date to be stated in a Notice to Proceed, issued to the Contractor and shall be completed by the Contractor in the time specified in the Contract Documents. If the bidder fails or refuses to execute the contract and to furnish an acceptable performance bond, payment bond or Certificate of Insurance within ten (10) days after acceptance of the bid, the bid security may be forfeited or cashed by the WDMCS District as liquidated damages.

The undersigned acknowledges the fact that The Owner reserves the right to accept the bid which in its judgment is the most responsive responsible and best bid or to reject any and all bids and alternatives and to waive or disregard technicalities or irregularities in any bid as it may deem to be in the best interest of the Owner. The Owner or its designees may consider as irregular any bid on which there is an alteration of, or departure from, the Bid Form.

The bidder is () or is not () an Iowa resident bidder as defined in Section 73A.21 of the Iowa code. If not a resident bidder, the bidder states that it is a non-resident bidder from the state of _____. This state does () or does not () provide for a bidder preference for resident bidders. This state does () or does not () provide a labor preference for resident labor. If the state in which your company is a resident allows for either a bidder preference or a labor preference, please provide the citation to the code section, and the details of each preference allowed in your resident state.

(Name of Bidder / General Contractor)

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**BID FORM
Section 000210 - Page 4**

If the Bidder is an individual, the Bidder must sign in individual capacity. Bids by partnerships shall be signed with the partnership name followed by the signature and designation of one of the partners or other authorized representative. Bids by corporations shall be signed with the name of the corporation followed by the signature and designation of the president or other person authorized to bind the corporation and attested to by the secretary with corporate seal (if available). Bids by joint ventures shall be signed by each participant in the joint venture or by an authorized agent of each participant. The names of all persons signing should also be typed or printed below the signature. A bid by a person who affixes to his signature the word "president," "secretary," "agent," or other designation without disclosing his principal may be held to be the bid of the individual signing. When requested by the Owner, evidence of the authority of the person signing shall be furnished.

SUBMITTED BY: _____
(Name of Bidder / General Contractor)

SIGNED: _____
(Signature of Authorized Representative) (Date)

(Print Name of Authorized Representative) (Title)

ADDRESS: _____

PHONE #: _____ **FAX #:** _____

CONTRACTOR'S LICENSE #: _____ **EXPIRATION:** _____

IF CORPORATION, THE STATE OF INCORPORATION: _____

AFFIX CORPORATE SEAL HERE
(IF APPLICABLE)

NOTARIZATION: STATE OF _____, COUNTY OF _____, ss:

Before me, a notary of the public, personally appears the above named and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to me by _____ on this ____ day of _____

Notary Public Signature: _____

Commission Expires: _____

END OF DOCUMENT 000210

DOCUMENT 000220 – NON-COLLUSION AFFIDAVIT

The Contractor and/or the sub-contractors, as applicable, shall provide this affidavit:

State of Iowa)
) ss.
County of Polk)

_____ being first duly sworn, deposes and says that he or she
(Name)
is _____ of, _____.
(Title) (Contractor)

The party making the foregoing bid that the bid is not made in the interest of, or on the behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereto to effectuate a collusive or sham bid."

OATH AND AFFIRMATION

The undersigned certifies under penalty of perjury that the foregoing is true and correct;

NAME OF CONTRACTOR/ORGANIZATION: _____
(Contractor)

BY: _____

(Signature) (Title)

(Type/Print Name) (Date)

THIS STATEMENT MUST BE NOTARIZED

STATE OF _____, COUNTY OF _____, ss:

Before me, a notary of the public, personally appears the above named and swore that the statements contained in the foregoing document are true and correct.

Subscribed and sworn to me by _____ on this _____ day of _____

Notary Public Signature: _____

Commission Expires: _____

END OF DOCUMENT 000220

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**NON-COLLUSION AFFIDAVIT
Document 000220 - Page 2**

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DOCUMENT 000230 – BIDDER STATUS FORM

PART A - To be completed by all bidders.

Please circle **YES** or **NO** for each of the following:

YES	NO	My company is authorized to transact business in Iowa. (To help you determine if your company is authorized, please review the "Authorization to Transact Business Worksheet" document 000240).
------------	-----------	--

YES	NO	My company has an office to transact business in Iowa.
------------	-----------	---

YES	NO	My company's office in Iowa is suitable for more than receiving postal mail, telephone calls, and e-mails.
------------	-----------	---

YES	NO	My company has been conducting business in Iowa for at least 3 years prior to the first request for bids on this project.
------------	-----------	--

YES	NO	My company is not a subsidiary of another business entity or my company is a subsidiary of another business entity that would qualify as a resident bidder in Iowa.
------------	-----------	--

If you answered "YES" for each question above, your company
qualifies as a resident builder. Please complete Parts B & D of this form.

If you answered "NO" to one or more questions above, your company is a
non-resident bidder. Please complete Parts C & D of this form.

PART B - To be completed by all resident bidders.

My company has maintained offices in Iowa during the past 3 years at the following addresses:

Dates: ____ / ____ / ____ to ____ / ____ / ____ Address: _____

City, State, Zip: _____

Dates: ____ / ____ / ____ to ____ / ____ / ____ Address: _____

City, State, Zip: _____

Dates: ____ / ____ / ____ to ____ / ____ / ____ Address: _____

City, State, Zip: _____

You may attach additional sheet(s) if needed.

PART C - To be completed by all non-resident bidders.

1. Name of the home state or foreign country reported to the Iowa Secretary of State:

2. Does your company's home state or foreign country offer preferences to resident bidders, resident labor force preferences or any other type of preference to bidders or laborers?

YES NO

3. If you answered "YES" to question 2, identify each preference offered by your company's home state or foreign country and the appropriate legal citation.

You may attach additional sheet(s) if needed.

PART D - To be completed by all bidders.

I certify that the statements made on this document are true and complete to the best of my knowledge and I know that my failure to provide accurate and truthful information may be a reason to reject my bid.

First Name: _____

Signature: _____ Date: _____

You must submit the completed form to the governmental body requesting bids per 875 Iowa Administrative Code Chapter 156. This form has been approved by the Iowa Labor Commissioner.

END OF DOCUMENT 000230

DOCUMENT 000240 – AUTHORIZATION TO TRANSACT BUSINESS

This worksheet may be used to help complete Part A of the Resident Bidder Status form. If at least one of the following describes your business, you are authorized to transact business in Iowa.

- | | | |
|------------|-----------|--|
| YES | NO | My business is currently registered as a contractor with the Iowa Division of Labor. |
| YES | NO | My business is a sole proprietorship and I am an Iowa resident for Iowa income tax purposes. |
| YES | NO | My business is a general partnership or joint venture. More than 50 percent of the general partners or joint venture parties are residents of Iowa for Iowa income tax purposes. |
| YES | NO | My business is an active corporation with the Iowa Secretary of State and has paid all fees required by the Secretary of State, has filed its most recent biennial report, and has not filed articles of dissolution. |
| YES | NO | My business is a corporation whose articles of incorporation are filed in a state other than Iowa, the corporation has received a certificate of authority from the Iowa secretary of state, has filed its most recent biennial report with the secretary of state, and has neither received a certificate of withdrawal from the secretary of state nor had its authority revoked. |
| YES | NO | My business is a limited liability partnership which has filed a statement of qualification in this state and the statement has not been canceled. |
| YES | NO | My business is a limited liability partnership which has filed a statement of qualification in a state other than Iowa, has filed a statement of foreign qualification in Iowa and a statement of cancellation has not been filed. |
| YES | NO | My business is a limited partnership or limited liability limited partnership which has filed a certificate of limited partnership in this state, and has not filed a statement of termination. |
| YES | NO | My business is a limited partnership or a limited liability limited partnership whose certificate of limited partnership is filed in a state other than Iowa, the limited partnership or limited liability limited partnership has received notification from the Iowa secretary of state that the application for certificate of authority has been approved and no notice of cancellation has been filed by the limited partnership or the limited liability limited partnership. |

YES	NO	My business is a limited liability company whose certificate of organization is filed in Iowa and has not filed a statement of termination.
YES	NO	My business is a limited liability company whose certificate of organization is filed in a state other than Iowa, has received a certificate of authority to transact business in Iowa and the certificate has not been revoked or canceled.

END OF DOCUMENT 000240

DOCUMENT 000300 – PROJECT SCHEDULE

1.1 GENERAL

- A. This Document with its referenced attachments is part of the Bid Procurement and Contracting Requirements for the Project.

1.2 TIMELINE

- A. Project Timeline is as follows:

1. Bid Procurement:

- | | | |
|----|--|---|
| a. | February 23 rd , 2026: 7:00pm | Publish Public Hearing
(School Board Meeting) |
| b. | March 9 th , 2026: 7:00pm | Conduct Public Hearing
Publish Notice of Bid Letting
(School Board Meeting) |
| c. | March 10 th , 2026: | Release Bidding & Construction Documents |
| d. | March 23 rd , 2026: 3:00pm | Pre-Bid Meeting and Walkthrough |
| e. | April 1 st , 2026: 3:00pm | Filing and Opening of Sealed Bid Proposals |
| f. | April 7 th , 2026: 5:00pm | Executed Contract, Bonds, and similar
Documents due to District for Board Packet |
| g. | April 13 th , 2026: 7:00pm | Contract Award (School Board Meeting) |

2. Construction:

- | | | |
|----|-------------------------------|--------------------------------|
| a. | May 25 th , 2026: | Commencement of Work |
| b. | July 31 st , 2026: | Substantial Completion of Work |

3. Closeout:

- | | | |
|----|---------------------------------|--|
| a. | August 14 th , 2026: | Final Completion of Work
(punchlist items complete, O&Ms delivered) |
|----|---------------------------------|--|

END OF DOCUMENT 000300

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**PROJECT SCHEDULE
Section 000300 - Page 2**

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DOCUMENT 000310 - EXISTING CONDITIONS

1.1 EXISTING CONDITION INFORMATION

- A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of the Bidders' own investigations. They are made available for Bidders' convenience and information, but are not a warranty of existing conditions.
- B. Existing drawings that include information on existing conditions including previous construction at the Project site may be available for viewing at the West Des Moines Community School District's Operations Building. These drawings were used in coordinating the design as presented in the bid documents.
- C. Each bidder shall visit the site and be familiar with the existing conditions as described in Section 000200 "Instructions to Bidders".
- D. Related Requirements:
 - 1. Document 000200 "Instructions to Bidders" for the Bidder's responsibilities for examination of Project site and existing conditions.
- E. No representation or warranty is made by the Architect or the Owner of the adequacy or contents of the original existing drawings or other information available to bidders. Information available to the bidders is not part of the contract documents. The
- F. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 2. Architect has no responsibility for the discovery, presence, handling, disposal of, or exposure to, hazardous materials or toxic substances, in any form, on the project site. If unanticipated hazardous materials are encountered, do not proceed with demolition and construction. If materials suspected of containing hazardous materials are encountered, do not disturb. In either case, immediately contact and notify the owner. Stop work in the area of potential hazard. Contractor shall shut off fans and other air-handlers ventilating the area and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.
 - 3. This project shall meet all relevant federal and state regulations regarding regulated asbestos-containing building materials (ACMs), including but not limited to the following:
 - a. Notifying the EPA, DNR, and NESHAP.

- b. Completing asbestos survey by a licensed asbestos building inspector in order to identify, classify and quantify all ACMs.
- c. Submission of a demolition notification form to the DNR at least 10 working days prior to the start of demolition (regardless of whether ACMs were discovered).
- d. Removal of ACMs by a permitted asbestos abatement contractor.

END OF DOCUMENT 000310

DOCUMENT 000400 - NOTICE OF AWARD

1.1 BID INFORMATION

- A. Bidder / Contractor Name: _____
- B. Bidder / Contractor Address: _____
- C. Owner Name: West Des Moines Community School District
- D. Project Name: WDMCS Valley Southwoods Roofing Replacement
- E. Project Location: 625 S 35th St; West Des Moines, Iowa 50265
- F. Design Professionals: Architect: MELEE, LLC (dba: Studio MELEE)

1.2 NOTICE OF AWARD OF CONTRACT

- A. Notice: The above Bidder is hereby notified that their bid, dated _____ for the above Contract has been considered and the Bidder is hereby awarded a contract for the West Des Moines Community School, WDMCS Valley Southwoods Roofing Replacement.
- B. The Contract Sum is: _____ Dollars (\$ _____)

1.3 EXECUTION OF CONTRACT

- A. Contract / Agreement: Copies of the Agreement will be made available to the Bidder / Contractor immediately. The Bidder must comply with the following conditions precedent within ten (10) days of the above date of issuance of the Notice:
1. Deliver to Owner (3) three sets of fully executed copies of the Agreement.
 2. Deliver with the executed Agreement, the performance bond, payment bond, and Certificates of Insurance.
- B. Compliance: Failure to comply with conditions of this Notice within the time specified will entitle Owner to consider the Bidder in default, annul this Notice, and declare the Bidder's Bid security forfeited.
1. Within ten (10) days after the Bidder complies with the conditions of this Notice, Owner will return to the Bidder one fully executed copy of the Agreement.

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**NOTICE OF AWARD
Document 000400 - Page 2**

1.4 NOTIFICATION

A. This Notice is issued by:

West Des Moines Community School District

SIGNED:

(Signature of Authorized Representative)

(Date)

(Print Name of Authorized Representative)

(Title)

END OF DOCUMENT 000400

DOCUMENT 000410 - SCHEDULE OF VALUES

1.1 BID FORM SUPPLEMENT

- A. A completed Proposed Schedule of Values form is required to be provided within ten (10) days of project award.

1.2 PROPOSED SCHEDULE OF VALUES FORM

- A. Proposed Schedule of Values Form:
 - 1. Provide a breakdown of the bid amount, including all accepted alternates, in enough detail to facilitate continued evaluation of bid and applications for payment.
 - 2. Provide separate line items for Labor and Material for each item of content. Coordinate with the Project Manual Table of Contents. Provide multiple line items for principal material and subcontract amounts in excess of (3%) Three percent of the Contract Sum.
- B. Arrange schedule of values consistent with format of AIA Document G703-1992.
 - 1. Copies of AIA standard forms may be obtained from the American Institute of Architects: <https://www.aiacontracts.org/>.

END OF DOCUMENT 000410

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**SCHEDULE OF VALUES
Document 000410 - Page 2**

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DOCUMENT 000500 - PROJECT FORMS

1.1 GENERAL:

- A. Where it is provided in the bid documents that the contractor shall use AIA documents, they are hereby made a part of these documents to the same extent as if bound herein. Copies of AIA standard forms may be obtained from the American Institute of Architects: <https://www.aiacontracts.org/>.

1.2 AGREEMENT:

- A. Form of Agreement. *No substitutions.*

1. West Des Moines Community School District Form of Agreement Between Owner and Contractor, where the basis of payment is a stipulated sum, forms the basis of the contract between the Owner and Contractor and is hereby made a part of these Documents to the same extent as if bound herein. All provisions which are not amended or supplemented remain in full force and effect.

- | | | |
|----|------------------|---|
| 1) | Document 000600: | Standard Form Contract Agreement |
| 2) | Document 000610: | Exhibit A: Scope of Work |
| 3) | Document 000620: | Exhibit B: Documents |
| 4) | Document 000630: | Exhibit C: Special Terms and Conditions |
| 5) | Document 000640: | Exhibit D: Standard Terms and Conditions |

1.3 FORMS:

- A. Administrative Forms:

1. Additional forms are specified in Division 01 General Requirements.

- B. Contract Bid Bond: *No substitutions.*

1. Bid Bond Form: **AIA Document A310-2010,
"Bid Bond"**

- C. Contract Performance Bond & Contract Payment Bond: *No substitutions.*

1. Performance Bond Forms: **AIA Document A312-2010,
"Performance Bond"**

2. Payment Bond Forms: **AIA Document A312-2010,
"Payment Bond"**

D. Information and Modification Forms: *Similar approved forms may be used.*

1. Change Order Form: **Document 012500:
"Change Order Form"**
2. Request for Information: **Created by Contractor.**
3. Substitution Request Form: **Document 016300:
"Substitution Request Form"**

E. Payment Forms: *Similar approved forms may be used.*

1. Pay Application Form: **AIA Document G702-1992,
"Application and Certificate for Payment"**
2. Schedule of Values Form: **AIA Document G703-1992,
"Continuation Sheet"**

F. Closeout Forms: *Similar approved forms may be used.*

1. Completion Form: **Document 017500:
"Certificate of Substantial Completion"**

END OF DOCUMENT 000500

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 «202»
(In words, indicate day, month and year.)

BETWEEN the Owner:

(Name, legal status, address and other information)

West Des Moines Community School District
3550 Mills Civic Parkway
West Des Moines, IA 50265

»««»

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)

« »
« »

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.

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 Work may commence upon receipt by the Contractor of a written "Notice to Proceed." In the absence of a written "Notice to Proceed" work may start as soon as the Contractor has filed with the Owner the required bonds and certificate of insurance and have received a copy of the fully executed contract

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

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

§ 3.3 Substantial Completion

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work by _____, 20____ and Final Completion of all punch list items shall be achieved within _____ days of Substantial Completion or no later than _____, 20____.

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work**Substantial Completion Date**

<< >>

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

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 Alternates, if any, included in the Contract Sum:

Item**Price**

<< >>

§ 4.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement. *(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)*

Item**Price****Conditions for Acceptance**

<< >>

§ 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)**

<< >>

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

<< N/A >>

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

<< >>

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, or as follows:

<< >>

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the « 1st » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « last » day of the « same » month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « thirty » (« 30 ») days after the Architect receives the Application for Payment.

§ 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 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 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; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.6.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due: Three percent (3%) or a greater amount if required by law.

§ 5.1.7.2 Retainage will be reduced in accordance with Iowa law.

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 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 A201–2017, 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 thirty-one 31 days following approval and final acceptance of the Project by the School Board (Owner) upon receipt and review of the Architect's Certificate and Recommendation for Final Payment.

Final payment may be contingent upon receipt of all Chapter 573 claim releases and other required closeout documents and shall be subject to the conditions of and shall be paid in accordance with the provisions of Iowa Code Chapter 573 and Iowa Code Chapter 26.

§ 5.3 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate equal to the rate specified by rule pursuant to Iowa Code Section 74A.2 or Iowa Code Section 573.14, whichever is less.

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 A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

§ 6.2 Binding Dispute Resolution

For any Claim not resolved by mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be Litigation in a court of competent jurisdiction. If the Owner prevails in any legal action arising out of this Agreement, the Contractor shall pay, in addition to any damages, all expenses of such action including reasonable attorney's fees, all expert witness fees, costs, and litigation expenses incurred by the Owner, including those incurred on appeal. The term "legal action" shall be deemed to include any arbitration, administrative proceedings, and all actions at law or in equity, including appeals.

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 A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall not be required to pay the Contractor a termination fee.

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 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 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given as set forth below:

(Insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

<< >>

§ 8.7 Other provisions:

To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Owner, its agents, representatives, and employees (Indemnitees) from and against all claims, damages, losses and expenses, including, but not limited to, attorney's fees, arising out of or resulting from or in connection with the performance of the Work, 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 otherwise reduce any other right or obligation of indemnity or contribution which would otherwise exist, as to any party or person described in Contract Documents.

The Contractor shall not be owned, operated, or managed by a registered sex offender who has been convicted of a sex offense against a minor in accordance with Iowa Code 692A.113. In addition, the Contractor shall not permit an employee, Subcontractor (Company) owned, operated, or managed by, or Subcontractor employee who is a registered sex offender convicted of a sex offense against a minor on real property of the Owner's schools in accordance with Iowa Code 692A.113. The Contractor further acknowledges and certifies by signing this Agreement that the services provided under this Contract comply with Iowa Code 692A.113.

>>

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds .3 AIA Document A201™–2017, General Conditions of the Contract for Construction

<< >>

- .5 Drawings

Number

Title

Date

<< >>

- .6 Specifications

Section	Title	Date	Pages
<< >>			

.7 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.

.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 incorporated into this Agreement.)

<< >>

[<< >>] The Sustainability Plan:

Title	Date	Pages
<< >>		

[<< >>] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
<< >>			

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

<< >> Performance Bond Payment Bond	Equal to 100% of the Contract Amount Equal to 100% of the Contract Amount
--	--

>>

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

West Des Community School District
OWNER (Signature)

<< >> Board President
 (Printed name and title)

<< >>
CONTRACTOR (Signature)

<< >>
 (Printed name and title)

DOCUMENT 000610 – EXHIBIT A – SCOPE OF WORK

Exhibit A
to
Standard Form Contract Agreement (insert contract number)
Between West Des Moines Community School District and (insert contractor name)
For WDMCS Valley Southwoods Roofing Replacement Project

Section 1. Contractor's Work

The Contractor's Work includes all labor; supervision; materials; equipment; services; supplies; tools; facilities; transportation; storage; hoisting; receiving; licenses; inspections; certifications; overhead; profit; insurance; bonds and other items required or reasonably inferable to properly and timely perform and complete all work and services to be performed by the Contractor pursuant to this Agreement. Contractor's Work shall be performed in accordance with the following Drawings and Specification Section(s):

Specification Section:

Descriptions:

Division 00

Bidding & Contract Requirements

Division 01

General Requirements

Contractor's Work shall be completed in compliance with the standards described in the Drawings, Specifications and other Contract Documents, or, if no such standards are specified, in compliance with industry standards.

Section 2. Contract Inclusions

The Contractor's Work specifically includes, but is not limited to the following:

2.1. General

- 2.1.1. Contractor shall provide a payment bond and a separate performance bond in amounts equal to the Contract Sum. Costs of the bonds are included in the Contract Sum.

Section 3. Contract Exclusions

The Contractor's Work specifically excludes the following:

- 3.1. None

Section 4. Contract Time

The Contractor's Work shall be completed as follows:

Contractor shall commence Work once the school board has approved award of contracts at a public meeting.

- 4.1. The Contractor's work shall be completed according to the project specifications as modified from time to time during the course of the project and as communicated with the Contractor through regularly scheduled progress meetings. Contractor shall be responsible for meeting all scheduled milestone dates, and coordinating any required modifications with other contractors so as to not negatively impact their scope of work.

- 4.2. Each contractor must attend and participate in Scheduling meetings to verify the Construction Schedule and Work Flow (multiple meetings TBD). Contractor will be requested to provide specific and accurate durations that will be included within the project schedule and will be required to abide by and/or accelerate upon these durations to remain consistent with project progress.

Section 5. Submittals

- 5.1. The Contractor shall submit product data, shop drawings, and samples per the Division 01 – General Requirements in a timeframe so as to allow the Design Team sufficient review time and not impact the project schedule. Refer to the project specifications for submittals required to be submitted.

Section 6. Closeout

- 6.1. The Contractor shall submit the following closeout documents and materials upon completion of Contractor's Work:
- 6.1.1. Operation and maintenance instructions.
 - 6.1.2. As-built drawings by the earlier of fourteen (14) days of completion of Contractor's Work or seven (7) days prior to the project's Substantial Completion.
 - 6.1.3. Refer to Specifications for additional closeout procedures and submittals.
 - 6.1.4. Owner training as required.

Section 7. Changes in Scope

- 7.1. For the purpose of extra work authorized in writing in advance by Owner, if any, the Contractor's fixed overhead rate and profit rate shall be as allowed by the Contract, but in any event no greater than 15% of cost.
- 7.2. When the Contractor seeks the work of a change order through the quotation of a Subcontractor(s), the cost submitted to the Owner will list a total of 15% overhead and profit for all contractors, 10% overhead and profit will be allowed for the contractor actually performing the work, and the remaining 5% will be allowed for coordination of the work by the Contractor.
- 7.3. 'Cost' shall include all items of material and labor, including pro rata charge for foremen, use of power tools and equipment (for the time actually used) bond premium (if any), liability, compensation, and automobile insurance. Social security insurance, old age, and unemployment insurance may be considered a cost, but these items will not carry the 15% for overhead and profit. When requested, the Contractor shall furnish evidence of net cost by means of invoices and certified payroll records.
- 7.4. When authorized by the Owner to proceed on a time and material basis, additional work authorizations containing detailed records of labor and materials used must be approved daily by the Owner. If Contractor is instructed to invoice this additional work separate from the Agreement, it is understood that all provisions of this Agreement apply.
- 7.5. The Contractor agrees to the following unit/alternate prices, which include all delivery, hoisting, supervision fringes, equipment, travel time, insurance, taxes (if applicable), bonds (if applicable), overhead and profit for the Work if ordered in writing by the Contractor.

END OF DOCUMENT 000610

DOCUMENT 000620 – EXHIBIT B – DOCUMENTS

Exhibit B
to
Standard Form Contract Agreement (insert contract number)
Between West Des Moines Community School District and (insert contractor name)
For WDMCS Valley Southwoods Roofing Replacement Project

Exhibit B Documents

The Documents for the Project as prepared by Studio MELEE, unless noted otherwise, are as follows:

1. Addendum No. 1 dated (insert date of documents).
2. Addendum No. 2 dated (insert date of documents).
3. Addendum No. 3 dated (insert date of documents).
4. The Project Manual and Specifications dated (insert date of documents).
5. The Drawings dated (insert date of documents):

Sheet	Description	Date	Revision
	Civil Drawings as prepared by (insert preparer)		
(insert #)	(insert sheet name)	(insert date)	(insert date)
	Landscape Drawings as prepared by (insert preparer)		
(insert #)	(insert sheet name)	(insert date)	(insert date)
	Architectural Drawings as prepared by (insert preparer)		
(insert #)	(insert sheet name)	(insert date)	(insert date)
	Structural Drawings as prepared by (insert preparer)		
(insert #)	(insert sheet name)	(insert date)	(insert date)
	Plumbing Drawings as prepared by (insert preparer)		
(insert #)	(insert sheet name)	(insert date)	(insert date)
	Mechanical Drawings as prepared by (insert preparer)		
(insert #)	(insert sheet name)	(insert date)	(insert date)
	Electrical Drawings as prepared by (insert preparer)		
(insert #)	(insert sheet name)	(insert date)	(insert date)

END OF DOCUMENT 000620

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**EXHIBIT B – DOCUMENTS
Document 000620 - Page 2**

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DOCUMENT 000630 – EXHIBIT C – SPECIAL TERMS AND CONDITIONS

Exhibit C
to
Standard Form Contract Agreement *(insert contract number)*
Between West Des Moines Community School District and *(insert contractor name)*
For WDMCS Valley Southwoods Roofing Replacement Project

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Section 1. Cost Items

1.1 Owner Direct Purchase of Materials

Payment terms for Owner purchased materials shall conform to the terms of this Agreement. Contractor shall include with its monthly application for payment, a schedule of values including as Work in place any Owner purchased materials suitably stored at the jobsite and/or incorporated into the Work for the respective payment period. The original invoice and delivery tickets must accompany the application for payment. The Contract Sum will be decreased as required by a deductive Change Order for the total amount of materials purchased directly by the Owner plus all applicable sales tax. Purchase of materials by the Owner will in no way relieve this Contractor of any responsibility that would otherwise be included under the scope of this Agreement, including but not limited to, ensuring timely delivery, completion of Contractor's Work, submittals, shop drawings and warranty. The Contractor shall remain liable for these materials and their proper installation until full and final acceptance of the Project by the Owner. The Owner has the right to directly purchase any equipment or materials and issue a credit to said Contractor.

1.2 Warranty

Contractor understands and accepts the fact that the specified warranty period of their work will start when the Building Substantial Completion is attained for the Phase of the project. Building Substantial Completion can be defined as the instant that the entire facility has been accepted by the Architect, Construction Manager, and Owner as meeting the requirements to be used for its intended purpose. Include any extension of warranty required due to the use of permanent systems during the construction period.

1.3 Quantities

Any quantities noted on the Drawings and Specifications are for information only. This Contract is a lump sum agreement. Contractor shall perform all work as required to complete the entire project.

Section 2. Job Site

2.1 Conduct

The Contractor must enforce discipline and good order among its employees and all 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. Persons permitted to perform Work under Contractor or any Subcontractor or Sub-Subcontractor shall meet all employment eligibility, safety training, security or drug/alcohol testing requirements required by law or by Owner. Any person not complying with all such requirements shall be immediately removed from the site.

2.2 Clean Up

The Contractor shall keep the premises and surrounding area free from accumulation of waste materials or 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. If the Contractor fails to clean up as provided in the Contract documents, the Owner may do so and Owner shall be entitled to reimbursement from the Contractor.

The Contractor shall, on an on-going basis, keep the Project site and surrounding area free from accumulation of waste materials, debris or rubbish caused by performance of the Contractor's Work. If such clean up is not properly or timely performed, the Owner shall give Contractor's

representative a written notice to comply within 24 hours from the time notice is given. If Contractor fails to correct such noncompliance within said 24 hours, the Owner is authorized to perform the clean up and to assess Contractor at the agreed charging rate, or, if none is established, at a reasonable charge.

2.3 Snow Removal/Winter Protection

Unless noted to the contrary in **Exhibit A or Specifications**, Contractor is responsible for removing snow/ice in areas that their material is stored, to any office/storage trailers on site, and for purposes to perform Work at no additional cost. Coordinate the stockpiling of snow to avoid interference with the Work of subcontractors. The general site and access roads will be cleared by Owner. Unless noted to the contrary in Exhibit A or Specifications, Contractor is responsible for weather protection as required for the performance of Contractor Work, including temporary protection, blankets, temporary heat, gas meter, piping, permits and fuel for this Work at no additional cost.

2.4 Temporary Power and Water

Unless noted to the contrary in **Exhibit A or Specifications**, the Owner shall provide electric service for use by the Contractor.

Unless noted to the contrary in **Exhibit A or Specifications**, the Owner shall provide water service for use by Contractor in locations designated by Owner. Contractor shall take all water service required for the operations of Contractor from this source.

2.5 Temporary Lighting

Unless noted to the contrary in **Exhibit A or Specifications**, temporary lighting that is provided by the electrical contractor is for safety and security purposes only. Contractor will provide task lighting as required for installations requiring additional illumination.

2.6 Parking

Unless more specifically stated in **Exhibit A**, Contractor will comply with the directions of the Owner in regards to parking near the site. Parking will be allowed in existing parking lot areas during unoccupied periods at the discretion of the Owner.

2.7 Access/Deliveries/Storage/Trailers

Unless more specifically stated in **Exhibit A**, Contractor will comply with the directions of the Owner in regards to access to the site, deliveries, and material/equipment storage. Unloading, handling, and hoisting of all items defined in Contractor's work shall be performed by Contractor. If any stored material obstructs the progress of any portion of the work, it shall be promptly removed or relocated by the Contractor without reimbursement. This site is limited in space.

Contractor shall coordinate temporary facilities with the Owner prior to bringing onto the project site. The Contractor will remain responsible for the coordination of work areas and available space. Any office facility which the Contractor may feel are desirable for their needs shall be at their cost and expense, however, erection of any such facility on site is still subject to the approval by the Owner and a mutually agreed upon location.

Power, meters, & utilities for Contractor's job trailers (if needed) and site power requirements are responsibility of Contractor.

2.8 Traffic Control

Unless more specifically stated in **Exhibit A**, Contractor shall provide all necessary traffic control for his own deliveries or work near public or temporary access roads. Contractor is responsible for keeping public traffic ways free of mud and debris from Contractor's vehicles.

2.9 Closeout Requirements

Contractor will submit all project specific material and equipment product data, closeout submittals, operating manuals, as-builts/record drawings, maintenance and/or operations manuals, etc. in electronic PDF format on CD. If electronic files are not available from vendors, Contractor shall be responsible for providing electronic PDF files (including oversize drawings). The files on the CD should be separated out per closeout item. Files will be named by specification section followed by the name of the closeout item.

Contractor shall submit one hard copy of each closeout item in a 3-ring binder with closeout items separated by heavy paper dividers with clear plastic tabs labeled by spec section. Oversize drawings should be placed in binder sleeves. This binder shall be submitted to Architect for review. Once the binder and oversize drawings are complete and approved by Architect, Architect will return the binder and drawings to the Contractor for the CD to be created. The foregoing procedures constitute the minimum requirements for the closeout process. These procedures shall not supersede any more stringent requirements set forth in the Contract Documents, but rather shall serve to supplement said requirements, and in the absence of said requirements, serve as the minimum requirements of the Owner. Contractor shall remain responsible for providing hard copies of closeout information as specified in the Contract Documents should Owner require it.

2.10 Existing Utilities

Contractor shall verify the location of all existing utilities to ensure no conflicts are with Contractor's Work. This shall include public, utility company or private utilities. Exploration if necessary to verify location of utilities shall be performed by Contract as necessary.

2.11 Layout and Engineering

Layout and engineering required for the performance of Contractor's work, including protection of benchmarks and control points established by the Owner and/or other Contractors shall be by Contractor as required. Known control points with coordinate/elevation information will be given. Contractor shall use these for reference for layout. Include replacement of control points that are lost or damaged during the execution of this work. Contractor is responsible for field verifying and maintaining all benchmark elevations, gridlines, exterior finish wall lines, door and window layout, finish floor elevation, roof elevation, and bearing elevations as needed for all trades throughout the job duration.

2.12 Testing and Permits

Testing shall be per Specifications in the Contract Documents. Contractor to provide access for Owner's testing agency. 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 must schedule all tests, inspections or specific approvals required by law or the Contract Documents and ensure items are complete and ready for inspection in advance to avoid delay in the Work. Contractor shall be responsible for the cost of re-testing as a result of failed testing. Building Permit will be obtained by the Contractor. All other permits will need to be attained by associated contractor. All Work included under this Work scope shall comply with all applicable federal, state and local ordinances, standards, rules, regulations, and statutes. All required inspections shall be coordinated and scheduled by the Contractor performing the Work. Contractor shall document all inspections to the Owner on the designated form.

2.13 Protection of Installations

Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration and operates at time of Substantial Completion.

Section 3. Scheduling and Coordination

3.1 Coordination with Existing Facility

Existing site will be occupied by Owner as described in Specifications while construction activities progress. Construction activities such as deliveries, building utility interruptions, and/or other construction related events are to be scheduled around Owner needs. Any necessary utility shutdowns or building tie-ins to operating facilities shall be scheduled a minimum of 48 hours in advance, for nights or weekends and coordinated with the Owner.

3.2 Weather

Contract time for completion of the Work includes the average weather conditions for the time period and region. Weather conditions are to be based on average normal weather for West Des Moines, Iowa for the previous 5 years. Extension of time will only be approved for weather conditions that were abnormal when compared to the previous 5-year period, during the same time frame and at the location of the Work, could not have been reasonably anticipated, and had an adverse effect on the date of substantial completion of the Work.

3.3 Penetrations

Unless more specifically stated in **Exhibit A**, Contractor is responsible for maintaining required fire/smoke/acoustical ratings at penetrations.

3.4 Roof Protection

Contractor includes all scaffolding and lifting equipment required to complete the work. Any scaffolding required on areas that have been roofed or existing roof will require adequate protection. Contractor shall place 1-1/2" of insulation and 1/2" plywood under any/all staged equipment, materials, or work areas on existing roof to protect roof. Contractor shall notify Architect of when the work area has been cleaned for a visible inspection for any damages.

3.5 Daily Construction Report

Upon request, Contractor shall furnish a Construction Daily Report to the Owner daily. Forms will be given to Contractor to be used. The reports shall describe work activities, work force, equipment, deliveries, etc. for that day. These shall be submitted prior to 9:00AM the following day.

END OF DOCUMENT 000630

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DOCUMENT 000640 – EXHIBIT D – STANDARD TERMS AND CONDITIONS

Exhibit D
to
Standard Form Contract Agreement *(insert contract number)*
Between West Des Moines Community School District and *(insert contractor name)*
For WDMCS Valley Southwoods Roofing Replacements Project

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Section 1. The Work

1.1 Contractor's Work

Except as otherwise provided in the Agreement, Contractor's Work includes all labor; supervision; materials; equipment; hoisting; delivery; installation; services; supplies; tools; facilities; transportation; permits; storage; receiving; licenses; inspections; certifications; overhead; profit; insurance; and other items required or reasonably inferable from the Contract Documents to properly and timely perform and complete the Contractor's Work. The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Contractor's Work. Performance by the Contractor shall be required to the extent reasonably inferable from the Contract Documents as being necessary to produce the intended results. The Contract Documents are complementary and what is required by one shall be required by all. The Contractor shall be solely responsible for construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Contractor's Work.

1.2 Contractor Rights and Responsibilities

If the Contractor enters into agreements with subcontractors, suppliers, manufacturers, employees, agents, vendors or other persons (collectively "subcontractors") performing portions of the Contractor's Work, the subcontractors shall be bound to the Contractor, to the extent of the Contractor's Work to be performed by the subcontractors, to the same extent the Contractor is bound to the Owner, and the subcontractors shall assume all of the obligations and responsibilities which the Contractor assumes under the Contract Documents. The Contractor shall be responsible to the Owner for acts and omissions of the subcontractors. Nothing contained in the Contract Documents shall create any contractual or third party beneficiary relationship between any parties other than the Owner and the Contractor.

1.3 Related Work

Contractor shall carefully inspect any work performed by others that is to precede, receive, align, abut, or otherwise relate to the Contractor's Work, and shall immediately notify Architect in writing of any apparent defects or inconsistencies. The Contractor is responsible for coordinating and verifying the dimensions, measurements and elevations at the Project site relevant to Contractor's Work. If Contractor commences the Contractor's Work without such written notice, such commencement shall constitute acceptance of all such work performed by

others and of all such field conditions, and all costs incurred in connection with Contractor's Work as a result thereof shall be borne by Contractor.

1.4 Investigations

The Contractor represents and agrees that it has carefully examined and understands all of the Contract Documents; has investigated the nature of, locality and Project site and the prevailing weather and climatological conditions; supply factors; storage and access limitations; available reports describing underground conditions; labor market availability and other conditions and difficulties under which the Contractor's Work is to be performed. The Contractor further represents and agrees that it enters into the Agreement on the basis of its own examination, investigation and evaluation of all such matters and not in reliance upon any reports, information, opinions or representations of the Owner. The Contractor further represents and agrees that the Contract Documents are sufficiently complete to have enabled it to determine the cost of the Contractor's Work and that the Drawings and Specifications are sufficiently complete to enable it to properly and timely perform the Contractor's Work outlined therein in accordance with the Construction Schedule, applicable laws, ordinances, building codes and regulations, and otherwise to fulfill all of its obligations under the Contract Documents. Contractor shall be responsible for all additional costs, delays, and damages resulting from the failure to complete the Work in accordance with the Construction Schedule.

1.5 Standards

The Contractor recognizes the relationship of trust and confidence established between it and the Owner by the Agreement. The Contractor covenants with the Owner to furnish its best skill and judgment and to cooperate in forwarding the interests of the Owner, and to perform the Contractor's Work in a good and workmanlike manner. The Contractor agrees to furnish efficient business administration and superintendence and to keep upon the Project site at all times an adequate supply of competent workers and quality materials, tools, equipment and supplies, and to secure execution of the Contractor's Work in the best, safest and soundest way and in the most expeditious and economical manner consistent with the interests of the Owner. Contractor's Work shall be completed in compliance with the standards described in the Contract Documents, or, if no such standards are specified, in compliance with industry standards. Contractor's relationship to the Owner is that of an independent contractor. The Contractor shall proceed with its Work under a team relationship that is based on good faith, trust and fair dealing and shall take all actions reasonably necessary or appropriate to perform this Agreement in an economical and timely manner that will permit the Project to be constructed within the Owner's budget and schedule. Contractor shall cooperate with all members of the Owner's team to further the interests of the Owner in accomplishing all goals and objectives in the most economical and efficient manner in order to provide the most value to the Owner from the available funding. The Contractor's Work shall be performed in accordance with applicable federal, state, county and school district laws, regulations, rules and Owner policies including but not limited to equal opportunity and affirmative action programs.

1.6 Contract Documents

The "Contract Documents" consist of (i) Modifications to the **Standard Form Contract Agreement Between Owner and Contractor** ("Agreement"); (ii) **Exhibit A**; (iii) **Exhibit B**; (iv) **Exhibit C**; (v) **Exhibit D**; (vi) the Agreement; (vii) bidding requirements (Notice to Bidders and Instruction to Bidders); (viii) any other Exhibits to the Agreement in letter order; and (ix) the Contractor's payment bond and its performance bond. The Contract Documents together form the contract between the parties thereto and are as fully a part of the Agreement as if attached thereto or repeated therein. In the event of any conflicts in the Contract Documents, the provisions shall govern in priority in the order listed in this Section 1.6. Subject to the preceding sentence, where a conflict exists between the Contract Documents, large-scale drawings shall take precedence over small-scale drawings; figures, dimensions and notes of materials shall take precedence over graphic representations; and express intentions of priority shall apply. In the case of an inconsistency between Drawings and Specifications, or within either Document itself, not clarified by Addendum, the better quality or greater quantity of Work shall be provided.

in accordance with the Architect's interpretation. In any case of discrepancy, the facts are to be brought to the attention of the Architect for a decision or interpretation. The Contract Documents are available for review by the Contractor at the Architect's office. All forms, ideas, processes, procedures, documents, Drawings, Specifications and other items developed for the Project shall become the property of the Owner. Neither the Contractor nor any of its subcontractors shall claim any ownership or copyright in such Master Planning Services or Contract Documents.

Section 2. Items to be provided by Contractor

2.1 *Insurance Certificates*

Prior to commencing the Contractor's Work but in any event within five (5) working days after the receipt of the Agreement by Contractor, the Contractor shall furnish certificates to the Owner evidencing insurance with conditions and with coverage limits not less than those specified in this Exhibit, **Section 4**. Such insurance shall be in such form and with an insurer satisfactory to Owner and authorized to do business in the jurisdiction of the Project. Costs of the insurance are included in the Contract Sum. Prior to first payment to Contractor, such certificates and endorsements shall be provided to Owner.

2.2 *Bonds*

If required per **Exhibit A**, prior to commencing the Contractor's Work but in any event within five (5) working days after the receipt of the Agreement by Contractor, the Contractor shall purchase and provide (i) a separate payment bond covering faithful payment of all of Contractor's payment obligations arising in connection with the Contract Documents and Contractor's Work thereunder, and (ii) a separate performance bond covering faithful performance of all of Contractor's performance obligations arising in connection with the Contract Documents and Contractor's Work thereunder, including warranty periods. Such bonds shall provide for penal sums equal to the Contract Sum. The penal sums on all Contractor bonds shall be automatically adjusted by any modifications. Contractor's surety waives all requirements for notice of modifications. Such bonds shall be in such form and with a surety satisfactory to Owner and authorized to do business in the jurisdiction of the Project. If the Owner so requests, the Owner, and other persons with interests in the Project shall be added as additional obligees on the Contractor's bonds. The bonds shall not be adversely affected by modifications or prepayments to Contractor, regardless of whether the surety has been provided with prior notice thereof, and surety's prior consent thereof shall not be required. The reference to this Agreement within the Contractor's performance bond, if any, shall be deemed as an express acknowledgment and consent by surety to be bound by all duties, liabilities and obligations which Contractor has to Owner in the event of delays or time related damages suffered by Owner as a result of Contractor's performance or failure to perform.

2.3 *Licenses*

If required by the Owner, prior to commencing the Contractor's Work but in any event within five (5) working days after the receipt of the Agreement by the Contractor, the Contractor shall furnish copies of all licenses, including business license or any additional license or registration if required by any governing authority, if any, which are required of the Contractor and its subcontractors to complete the Contractor's Work.

2.4 *Schedule of Values*

The Contractor shall provide a "Schedule of Values" acceptable to the Architect. The Schedule of Values shall allocate the entire Contract Sum among the various portions of the Contractor's Work and shall be prepared in such detail and form and supported by such data to substantiate its accuracy as the Architect may require.

2.5 *Subcontracts*

The Contractor shall promptly furnish the Owner, in writing, the name, trade and subcontract amount for each subcontract and purchase order, the names of all persons proposed as

manufacturers of the products identified in the Specifications, and copies of all subcontracts, purchase orders, warranties, product information and other relevant information pertaining to subcontractors. The Owner shall have the right, for reasonable cause, to reject any subcontractor selected by Contractor, and Contractor agrees to replace such subcontractor with a subcontractor approved by Owner. In such event the Contract Sum and Contract Time shall be equitably adjusted.

2.6 Submittals

The Contractor shall promptly submit shop drawings, product data, samples, tests, design and performance data, operating and/or maintenance manuals, and similar submittals as required by the Contract Documents or as requested by the Owner and in such sequence as to cause no delay in the Project or in the activities of the Contractor or other subcontractors. The Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect's review and/or approval of shop drawings, product data, samples or similar submittals unless the Contractor has specifically informed the Architect in writing of such deviation at the time of submittal and the Architect has given written approval to the specific 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 review and/or approval thereof. The Contractor is solely responsible for checking the submittals for conformance to the Contract Documents.

2.7 Progress Report

Whenever requested by the Owner, the Contractor shall fill out and turn in to the Owner, on a daily basis, a "Daily Report" in a form as furnished by the Owner. The report shall include a date and describe manpower, work locations, deliveries and problem situations, including but not limited to current and anticipated delays. Contractor's field Superintendent or Foreman shall report to the Owner's representative prior to commencing its Work on the Project, and report again after absence from the Project to advise Owner's representative of the particular phase of Work Contractor is about to perform. Contractor shall complete Owner's daily report forms at the end of each workday.

2.8 Record Drawings

The Contractor shall maintain and promptly provide timely updates to the as-built and record Drawings as required by the Contract Documents or as requested by the Owner.

2.9 Closeout

The Contractor shall promptly provide operating, maintenance, and/or warranty manuals, record Drawings, and Owner orientation and operation instructions as required by the Contract Documents or as requested by the Owner. Closeout documents will conform to Owner's Electronic Facility Documentation requirements.

2.10 Miscellaneous

Contractor shall also promptly provide additional information and items as requested by Architect, including off-site stored materials documents as described in this Exhibit item 3.2, Chapter 573 waivers/releases and other evidence of payment as described in this Exhibit item 3.5, cost estimates as described in this Exhibit item 5.6, coordination drawings as described in this Exhibit item 7.1, and material safety data sheets as described in Section 8.5.17

Section 3. Contract Sum and Payments.

3.1 Contract Sum

Subject to the provisions of the Contract Documents, the Owner shall pay the Contractor the Contract Sum in current funds for proper and timely performance of Contractor's Work. Payment to the Contractor by the Owner shall not constitute acceptance of the Contractor's Work. If an approved payment application is received by the Owner no later than the 25th day of a month, payments shall be made to Contractor at the end of the month following the month of receipt

and approval of Contractor's application for payment. For example, if an application for payment is received by the Owner May 5 payment will be made by June 30, to the extent such application is approved.

3.2 Progress Payments.

3.2.1 Based upon Contractor's applications for payment submitted to the Architect on Owner-approved forms. The Owner shall make progress payments to the Contractor on account of the Contract Sum, as provided herein.

3.2.2 Provided Contractor's application for payment is received by the Architect not later than the 25th of the month, the Architect shall include the Contractor's Work covered by that application in the next application for payment which the Architect submits to the Owner. If the Contractor's application for payment is received after such date, the Contractor's Work covered by it shall be included by the Architect in the following month's application for payment that the Architect submits to the Owner.

3.2.3 Contractor's application for payment shall be based upon the most current Schedule of Values, and shall indicate the percentage of completion of each portion of the Contractor's Work as of the end of the period covered by the Contractor's application for payment.

3.2.4 The amount of each progress payment shall be computed by determining that portion of the Contract Sum properly allocable to Contractor's Work which has been properly and timely completed, as determined by multiplying the percentage completion of each such portion of the Contractor's Work by the share of the total Contract Sum allocated to that portion of the Contractor's Work in the most current Architect-approved Schedule of Values, less 3% retainage. There shall then be subtracted the aggregate of previous payments made by the Owner and any other amounts to be properly deducted from or offset or back charged against such progress payment, as permitted under the Contract Documents. If approved in advance by Owner, the Contractor may include in progress payments materials and equipment stored off site, but only if Contractor complies with procedures satisfactory to the Owner, title to such materials and equipment is transferred to Owner, and the Owner's interest in such materials and equipment is fully protected by insurance at no additional cost to Owner.

3.2.5 Before Contractor starts Work on site and receives payment, the following items must be received by the Architect; Signed Contract Agreement, complete and correct insurance certificates, performance and payment bonds, detailed Schedule of Values breakdown acceptable to the Architect, Federal Tax Identification number, Contractor's state license number, any business license or registration required by the governing municipality, and any other information or documentation requested by the Owner at or before the Pre-Construction Meeting.

3.2.6 Failure to timely provide required insurance certificates, bonds or licenses, Schedule of Values, subcontractor information, submittals, progress reports, record Drawings, closeout items, or other information and items specified in this Exhibit **Section 2** will be grounds for the Architect to suspend any or all progress or final payments, without interest, until the required items are so provided.

3.3 Punch List Work

The punch list work shall be completed no later than seven (7) calendar days from the date written notice is presented to the Contractor that punch list work remains. Thereafter, Owner may complete the punch list work at the Contractor's expense without further notice. In accordance with the applicable law, the Owner may withhold up to two times the value (as

determined by the Architect) of incomplete, incorrect or punch list work if and/or when the Contractor requests release of all or a portion of its retainage.

3.4 Request for Early Release of Retainage Funds

Upon achieving Substantial Completion, as defined by Iowa Code, the Contractor may formally request the release of all or part of the retainage funds being held on the Project. The Contractors' request for Release of the Retainage Funds shall be accompanied by a sworn statement that ten (10) calendar days prior to filing the Request for Release of the Funds a notice was given to all known subcontractors, sub subcontractors and suppliers that the Contractor is requesting the early release of retainage funds. If proper documentation is received from the Contractor, the Owner will release all retainage funds at the next monthly Board meeting or within thirty (30) days, whichever is less, except it may retain the following: a) An amount equal to 200% of the value of labor or materials yet to be provided on the Project as determined by the Owner and its authorized contract representative. For purposes of this section, "authorized contract representative" means the Architect of record on the project, unless otherwise specified.

b) An amount equal to 200% of the value of any Chapter 573 claims currently on file at the time the Request for Release of Retainage is approved.

c) An amount equal to one-half percent ($\frac{1}{2}\%$) of the total value of the Project for Operation, Maintenance and Warranty Manuals and Record Drawings and Specifications not submitted ten (10) days prior to Substantial Completion inspection.

If the Owner withholds an amount from the retainage payment to the Contractor, the Owner will provide a reason the request is being denied to the Contractor within thirty (30) calendar days of the receipt of the request.

3.5 Final Payment

Final payment will be made no earlier than thirty-one (31) days following approval by the School Board at a regularly scheduled meeting, receipt of all Chapter 573 Claim Releases, Sales Tax information, and all other required closeout documents, and subject to the conditions of and in accordance with the provisions of Iowa Code Chapter 573 and Iowa Code Chapter 26. Acceptance of final payment by the Contractor shall constitute a waiver and release of any and all Claims by the Contractor against the Owner, except for Claims reserved in writing at such time.

3.6 573 Claim Releases, Etc.

Prior to payment, but subject to any limitations as prescribed by law, the Contractor shall submit 573 claim releases or waivers on Architect-supplied forms as a condition to receiving payment. Upon Architect's request the Contractor shall provide such further evidence satisfactory to the Architect that all subcontractors and all payrolls, taxes, bills for materials, equipment, supplies, other items and all other indebtedness connected with the Contractor's Work and included on the prior and current applications for payment, have been (or will be from the current payment) satisfied. Subcontractor's 573 claim releases or waivers on Architect-approved forms shall also be provided upon Architect's request.

3.7 Deductions

The Owner shall be allowed to deduct from any payments otherwise to be made to Contractor hereunder, any amounts to the extent necessary to protect the Owner from loss because of: (i) defective or nonconforming Contractor's Work; (ii) failure of Contractor to pay subcontractors or others; (iii) damage or Claims for which the Contractor is responsible and as to which Architect has provided Contractor with prior written notice and a reasonable opportunity (not exceeding five (5) working days) to cure; (iv) an anticipated failure to complete the Contractor's Work within the Contract Time or Contract Sum; and/or (v) any amount due Owner from Contractor under any other agreements between the parties. When the condition justifying the deduction no longer exists, Owner shall pay to Contractor any amount then due which has been previously deducted. Withholding of funds for claims of unpaid sums by subcontractors or suppliers shall be in accordance with Chapter 573 of the Code of Iowa.

3.8 Payments to Subcontractors

The Contractor shall timely pay for materials, equipment, supplies, services, labor and other items used in connection with its performance under the Agreement. The Owner shall be entitled to make payments, directly or by joint check, to subcontractors or others to whom Contractor has incurred obligations in connection with its performance under the Agreement, if Architect determines the circumstances reasonably support such payments. Such payments shall have the same effect as payments made directly to Contractor under the Agreement. Architect shall notify Contractor of such payments.

3.9 Use of Payments

The Contractor covenants and agrees that all funds received for the performance of Contractor's Work pursuant to the Agreement shall first be used solely for the benefits of persons or firms supplying labor, materials, supplies, tools, machines, equipment or services to or for the Project. Owner is authorized to report payment status to any subcontractors or other subcontractors or suppliers of the Contractor.

3.10 Right to Stop Work for Nonpayment

If the Owner does not pay the Contractor the amount then owed (after deduction, offsets, backcharges and retainage) within seven (7) working days after the end of the month in which such payment was due, then the Contractor may, upon fifteen (15) additional days' written notice to the Architect, stop the Contractor's Work until payment of the amount then owed has been received. This paragraph does not give Contractor the right to stop work if it disagrees with the propriety or amounts of deductions, offsets, back charges, or retainage. Contractor's only remedy is to make a claim in accordance with Section 9.

3.11 Taxes Identified

Contractors shall not include sales tax in the contract amount in accordance with the State of Iowa Department of Revenue guidelines. Taxes on goods and services not exempt shall be paid by the Contractor. Owner will provide Contractor exemption certificates and/or numbers to use for goods to be purchased tax free.

3.12 Funding for Payments

Payments to the Contractor shall be made by the Owner from cash on hand from such sources as may be legally available. Notwithstanding any other provision of the Agreement, if funds anticipated for the continued fulfillment of this Agreement are at any time not forthcoming or insufficient, through the failure of the State of Iowa or the Owner to appropriate funds or through discontinuance or material alteration of the program for which funds were provided, the Owner shall have the right to terminate this Agreement without penalty by giving not less than 3 days' written notice documenting the lack of funding.

3.13 Interest.

Payments due and unpaid under the Agreement shall bear interest from the date payment is due at the rate specified by rule pursuant to Iowa Code Section 74A.2 or Iowa Code Section 573.14, whichever is less.

Section 4. Insurance.

4.1 Insurance

The Contractor shall obtain and maintain the following minimum insurance:

4.1.1 Worker's Compensation / Employer's Liability

Statutory, including Employer's Liability with limits of \$500,000 each accident, \$500,000 disease policy limit and \$500,000 disease each employees. **Waiver of subrogation in favor of Owner and Architect is required.** Worker's compensation **MUST** be secured for Contractor's employees and Contractor must be a named insured.

4.1.2 Commercial General Liability

These limits can be met by primary and umbrella or “following form” excess liability policies. Coverage shall include: Premises-Operations (including with no exclusions for Explosion, Collapse, Underground), Products/Completed Operations, Independent Contractors, Broad Form Contractual Liability, and Personal and Advertising Injury, with at least \$1,000,000 Each Occurrence and \$1,000,000 Aggregate on a **PER PROJECT** basis. Contractor shall continue this coverage for at least two (2) years following final payment to Contractor in connection with the Project. The description of operations must either state “Blanket coverage for all projects of the “West Des Moines Community School District” or name the Project.

4.1.3 Automobile Liability

Contractor’s business automobile insurance shall at least cover the following automobiles: Owned, Hired and Non-Owned. The Bodily Injury and Property Damage Combined Single Limit for such coverage shall be at least \$1,000,000 Per Accident.

4.2 Additional Insured

Under its primary commercial general liability, Contractor will secure additional insured status for naming Owner, as an additional insured, using ISO additional insured endorsement CG 20 10 07/04 and CG 2037 07/04 (or any other endorsements that provide completed operations and have equal coverage). If umbrella or “following form” excess liability policies are needed to meet the required limits, these same parties shall have the same status and coverage as afforded by these endorsements. Notwithstanding anything to the contrary in any of these policies, these policies must be **PRIMARY** to any applicable insurance that the additional insureds may have. These policies will also include a severability of interest clause. Said policies shall also contain a Governmental Immunities Endorsement that complies with Section 670.4 of the Code of Iowa and includes the following provisions:

.1 the purchase of this Policy and the inclusion of the Owner as an Additional Insured does not waive any of the defenses of governmental immunity available to the Additional Insured under the Code of Iowa Section 670.4;

.2 this Policy shall cover only those claims not subject to the defense of governmental immunity under Code of Iowa Section 670.4 as it now exists and as it may be amended from time to time;

.3 the Additional Insured shall be responsible for asserting any defense of governmental immunity and may do so at any time and shall do so upon the timely written request of the Insurer; and

.4 the Insurer shall not deny coverage or deny any of the rights and benefits accruing to the Additional Insured under this Policy by reasons of governmental immunity unless and until a court of competent jurisdiction has ruled in favor of the defense(s) of governmental jurisdiction.

4.3 Certificates

The Contractor shall provide certificates of insurance and endorsements evidencing compliance with these requirements. The certificates of insurance shall provide for at least thirty (30) days’ firm written notice in the event of cancellation. Intent to notify is not acceptable. During the term of the Agreement and during the period of any required continuing coverages, the Contractor shall provide, prior to expiration of the policies, certificates evidencing renewal insurance coverages as described in this **Exhibit D**.

4.4 Builder's Risk Insurance

The Owner shall purchase and maintain property insurance upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the Owner, the Contractor, and subcontractors and shall insure against the perils of fire and extended coverage and shall include all risk insurance of physical loss or damage including, without duplication of coverage, theft, vandalism and malicious mischief. Waivers of Subrogation in favor of the Owner are hereby provided for all property insurance. Deductibles shall be the responsibility of the Owner.

4.4.1 Installation Floater.

The Owner's builder's risk property insurance identified in subsection 4.4 above does not cover Contractor's materials not yet installed into the Project. Contractor shall maintain an installation floater policy covering such property with at least \$100,000 of limits for such property stored on the Project site, such property in transit, and such property temporarily store off-Project site.

4.5 Waiver of Builder's Risk Insurance Carrier's Subrogation Rights

The Owner and Contractor waive all rights of recovery that they may have against each other and/or the Owner, its officers, agents and employees, for all claims, damages, injuries and losses, to the extent covered by such property insurance. Such waiver of subrogation shall be effective for such persons even though such persons would otherwise have a duty of indemnification or contribution, contractual or otherwise, and even though such persons did not pay the insurance premium directly or indirectly, and whether or not such persons had an insurable interest in any property damaged.

4.6 Risk of Loss

Except to the extent covered by the builder's risk insurance, the Contractor has the sole responsibility for the proper storage and protection of, and assumes all risk of loss of, Contractor's Work and tools, materials, equipment, supplies, facilities, offices and other property at or off the Project site. Contractor agrees not to look to Owner for any loss or damage to such items, however caused. The Contractor shall take every precaution in the protection of all structures, streets, sidewalks, materials and work of other contractors. Contractor shall protect its Work from damage by the elements or by other trades working in the area.

Section 5. Changes in the Work.

5.1 Modifications

No employee or agent of Owner, is authorized to direct any changes in Contractor's Work by oral order except in emergency affecting persons or property. Changes to the Contractor's Work and to the Agreement may be made only by a written directive or change order to the Agreement ("Modification") signed by the Owner and Architect/Engineer. The Modification shall be on Owner-approved forms. The Contractor, prior to the commencement of any revisions, shall submit promptly to the Architect, in writing, a Claim for adjustment to the Contract Sum and Contract Time for such revised Contractor's Work, in a manner consistent with Sections 5.4 and 5.5 below. If Owner accepts such Claim, any agreed adjustment to the Contract Sum and/or Contract Time shall be fully reflected in the Modification. If Owner does not fully accept such Claim, any adjustment to the Contract Sum and/or Contract Time shall be reflected in the Modification to the extent not in dispute, and any such adjustments, which are in dispute, shall be reserved by express statement in the Modification. Notwithstanding any such dispute, the Contractor shall nonetheless comply with the Modification as directed by the Architect, and such dispute shall be resolved as provided in Section 9.

5.2 Owner Changes

The Owner may make changes in the Contractor's Work by issuing amendments, addenda, supplemental instructions, change directives, or change orders signed by the Owner and Architect/Engineer. Unless otherwise directed by the Architect, the Contractor shall not thereafter order materials or perform Contractor's Work that would be inconsistent with such changes. Such changes will be promptly evidenced by a Modification to the Agreement, the Contract Sum and the Contract Time being adjusted accordingly.

5.3 Contractor Changes

The Contractor shall make no changes to the Contractor's Work except as set forth in a Modification signed by Owner and Architect/Engineer. The Contractor agrees to complete the Contractor's Work in strict compliance with the Contract Documents. The Contractor shall notify the Architect of any requests for changes within seven (7) calendar days following Contractor's discovery of any circumstances permitting a change. Any request made after seven (7) calendar days shall be the responsibility of the Contractor, and Contractor waives all Claims therefore.

5.4 Adjustments to Contract Sum

The Contractor agrees that adjustments to the Contract Sum as a result of any Modification shall be based on one of the following methods, in the priority listed: (i) mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation; or (ii) as reasonably determined by the Architect, based on either (a) unit prices or alternate prices stated in **Exhibit A** of the Agreement; or (b) verified direct costs of the revised Contractor's Work, and a fixed amount as overhead and profit determined as a percentage of such net aggregate direct costs in the Modification, in the percentage amount, if any, as set forth in **Exhibit A** of the Agreement. When both additions and credits related to the Contractor's Work are involved in a change, the allowance for overhead and profit shall be figured on the basis of the net increase or net credit with respect to that change. Time and material sheets shall be submitted as requested by Architect.

5.5 Adjustments to Contract Time

Contractor hereby waives and releases Owner from any and all Claims for all of Contractor's claims for delay damages including without limitation Claims attributable to breach of contract or tort, and whether caused by Architect, Owner or other persons for any reason or cause whatsoever, and regardless of whether any such delay or other conduct on the part of the Architect, Owner or other persons may be deemed unreasonable or was not contemplated by the parties.

5.6 Cost Estimates

In order to aid the Owner in determining whether to implement proposed change orders, Contractor agrees, at no additional cost, to submit to Architect firm estimates of changes in the Contract Sum and Contract Time which would result from such proposed change orders if implemented, to the extent such proposed change orders would involve changes in the Contractor's Work. Contractor's failure to respond within seven (7) calendar days will be deemed to be Contractor's agreement that such change has no effect on Contract Time or Contract Sum.

5.7 Backcharges

Contractor agrees that at any time a backcharge situation arises against another contractor that the backcharge will be resolved between affected contractors. If the situation cannot be resolved between contractors first, then all affected parties shall meet with the Architect to determine a mutually acceptable solution.

Section 6. Schedule

6.1 Time of Essence

Time is of the essence in connection with the performance of all obligations of the Contractor under the Contract Documents.

6.2 Mobilization

Contractor shall commence work on the date fixed by a written notice provided by the Architect. In the absence of a written notice, work may start as soon as the Contractor has filed with the

Owner the required bonds and certificate of insurance and Owner has received a copy of the fully executed Contract.

6.3 Commencement Condition

Failure to provide the items listed in this Exhibit, **Section 2** will be grounds for the Architect to prohibit the Contractor from commencing or continuing the Contractor's Work. Any delays resulting from any such prohibition shall be borne by the Contractor and the Contract Time shall not be extended and the Contract Sum shall not be adjusted on account of such delays.

6.4 Schedule

The Contractor shall meet or better the durations established in the Project Schedule and conform to the schedules. The Schedule will be updated periodically to reflect actual job progress. Unless written notification to the contrary is received from the Contractor within seven (7) calendar days after issuance, the revised Schedule may become the benchmark for contractually required performance. The Contractor shall provide sufficient crews, materials and equipment to maintain or improve upon the Schedule. Owner shall have the right to suspend Contractor's performance from time to time, or to reschedule or re-sequence the Contractor's Work.

6.5 Clarification Delays

Contractor request(s) for information do not justify time extensions. Contractor shall plan ahead and ask necessary clarifications in writing prior to the start of Contractor's Work in order to avoid delays to the established duration(s).

6.6 Workweek

Contractor shall comply with the Owner's standard Project workweek as designated by the Owner. The Contractor shall work on Saturdays as make-up days at no additional expense to the Owner in the event that it is necessary to achieve schedule requirements. Contractor shall provide Owner written notice in advance of request to work on the weekend.

6.7 Project Completion

The Contractor shall achieve Substantial Completion of the entire Work by the following date: July 31st, 2026. Final Completion shall be achieved no later than August 14th, 2026.

Section 7. Contractor.

7.1 Coordination

The Contractor shall cooperate with the Owner and Architect in scheduling and performing the Contractor's Work to avoid conflict, delay in or interference with the work of the Project. The Contractor shall cooperate with the Owner and its other contractors, whose work might interfere with the Contractor's Work. If reasonably requested by the Architect, the Contractor shall prepare coordination drawings in areas of congestion, specifically noting and advising the Architect of potential conflicts between the Contractor's Work and the other work of the Project. Even with such cooperative and coordination efforts, should a conflict occur, the Architect will determine how such conflict should be resolved, and its decision in that regard will be final. The Contractor agrees to abide by such decisions and make any changes required to eliminate such conflict without additional cost or expense to the Owner.

7.2 Laws, Permits, Fees and Notices

The Contractor shall give all required notices and comply with all laws, ordinances, rules, regulations, licensing requirements and orders of public authorities bearing on performance of the Contractor's Work. Such compliance shall include but not be limited to compliance with all applicable building codes, and whenever applicable the federal Contract Work Hours Standard Act of 1962; the federal Civil Rights Act of 1964, federal Executive Orders 10925; 11114, 11246

(as amended by federal Executive Order 11375) 11625, 11701 and 11758; Americans With Disabilities Act; Fair Housing Act; federal Fair Labor Standards Act; Minority Business Enterprise and Women Business Enterprise laws and regulations; state civil rights statutes; and federal and state OSHA laws environmental laws veteran's status laws and federal, state and local tax laws social security acts; unemployment compensation acts; and workers' or workmen's compensation acts, and all other applicable federal, state and local laws, rules, regulations, ordinances, policies and procedures, including Owner policies and procedures and the Iowa Smoke Free Air Act, as amended from time to time. The Contractor shall timely submit all necessary reports and information to the appropriate federal, state, and local agencies. The Contractor shall not refuse to hire, accept, register, classify or refer for employment, discharge any employee or otherwise discriminate in employment against any employee or applicant because of the age, race, creed, color, sex, national origin, marital status, parental status, sexual orientation, gender identity, or religion of such applicant or employee. The Contractor will select qualified applicants with disabilities who can perform the essential function of the job or position with or without reasonable accommodations.. Because it is the desire of the Owner to encourage equal employment policies, all contractors, including suppliers supplying goods or services to the Owner, are expected to comply with the spirit of equal opportunity employment as well as with the letter of all applicable statutes and regulations. Compliance shall require the Contractor not to discriminate, and in addition, to take reasonable affirmative action to ensure that members of minority groups are effectively accorded equal opportunities. The Contractor shall secure and pay for all permits and governmental fees, fines, licenses and inspections necessary for proper execution and completion of the Contractor's Work, except to the extent required by law to be obtained or paid by the Owner or Architect. The Contractor shall comply with requirements of applicable law pertaining to determining locations of underground facilities, careful and prudent excavation, notice to the utility company in the event of damage, payment of the cost of repairs and payment of civil penalty for violation of the law. The Contractor shall pay all fines, penalties, interest, attorney's fees and other costs and expenses arising out of or in connection with Contractor's failure to comply with the foregoing and all other requirements of the Contract Documents.

7.3 General Warranties

The Contractor warrants to the Owner and Architect that (i) materials and equipment furnished under the Agreement will be of good quality and new unless otherwise required or permitted by the Contract Documents, (ii) the Contractor's Work will be free from defects and will strictly comply with the requirements of the Contract Documents, (iii) no asbestos, polychlorinated biphenyl (PCB) or other known hazardous or toxic substance will be used in connection with or incorporated into the Contractor's Work in violation of the Contract Documents, (iv) the Contractor's Work will at all times be free of all claims and liens, and (v) Contractor and its subcontractors hold all required licenses to permit it to fully perform all of Contractor's Work. Contractor's Work not conforming to these requirements, including substitutions not properly approved and authorized, shall be considered defective. These warranties shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents. The Contractor agrees that the Architect has the authority to reject any of the Contractor's Work which is defective or which is rejected by the Architect or Owner. Contractor shall provide written certificates confirming compliance with these warranties upon request of the Architect.

7.4 Indemnity

To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, and its agents, assigns, employees, insurers, sureties, affiliates, shareholders and members from and against claims, damages, losses and expenses, including but not limited to attorney's fees and loss of use, but only to the extent arising out of or resulting from the performance by Contractor of its Work under the Contract Documents or any breach of any provisions of the Contract Documents by Contractor or any negligent acts or omissions of the

Contractor or its subcontractors or anyone for whose acts or omissions it is responsible. This Section is not intended to require indemnification for a claim, damage, loss or expense to the extent arising out of or resulting from the negligence of the Owner. Such obligation shall not be construed to negate, abridge or otherwise reduce other rights or obligations of indemnity which would otherwise exist for a party or person described in this Section. In claims against any person or entity indemnified under this Section by an employee of the Contractor or anyone directly or indirectly employed by Contractor or anyone for whose acts or omissions Contractor may be responsible, the indemnification obligation under this Section shall not be limited by a limitation on amount or type of damages, compensation or benefits payable under workers' or workmen's compensation acts, disability benefit acts or other employee benefit acts. Such indemnity shall not extend to design errors or omissions of the Architect or other design professionals, unless such design services are performed by the Contractor.

7.5 Correction Obligation

The Contractor agrees to correct, at its cost, any of Contractor's Work which is defective and which is rejected by the Architect or Owner, for a period of one (1) year (or longer if required by the Contract Documents) from the date of substantial completion of the Contractor's Work. Contractor's correction obligation shall not limit or modify the time within which the Contractor's obligations to strictly comply with the Contract Documents (including its warranty to provide non-defective Work) may be sought to be enforced nor the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations under the Contract Documents (including its warranty to provide non-defective Work). Corrected Work shall itself be subject to an additional one (1) year correction period commencing upon the date of correction. If, at any time, the Contractor fails within a five (5) day period after receipt of notice from the Owner or such shorter time as may be reasonable under the circumstance to commence and continue to correct such Work with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such Work or it may notify the surety and request it to assume the obligations of the Contractor within five (5) days following receipt by Contractor and/or surety of written notice. In such case a change order shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services and any attorney's fees made necessary by such default, neglect or failure. If current or future payments thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

7.6 Maintenance

The Contractor shall be responsible for any periodic maintenance of the Contractor's Work as required for the operation of the Project during construction of the entire Project. All such costs are included in the Contract Sum.

7.7 Deliveries

Contractor agrees that all deliveries to the job site of Contractor's materials and equipment and all unloading, handling, hoisting and storage of such items shall be scheduled at the direction of the Owner. Contractor shall provide Owner with at least 24-hour prior notice. Contractor shall take particular care to locate and store all heavy material and equipment on floor areas in a manner acceptable to the Structural Engineer and Architect. Contractor shall not restrict the flow of traffic into or around the Project site. At the direction of the Architect, Contractor shall relocate improperly stored materials at Contractor's expense.

7.8 Traffic Control

Contractor shall provide all traffic control, barricades, flagmen, temporary ramps and similar measures if required or requested by the Architect for material deliveries or completion of the Contractor's Work.

7.9 Job-Site Waivers

Contractor shall defend, indemnify and hold Owner harmless from all damages, costs, expenses including attorneys' fees, and personal injuries incurred by Contractor's visitors to the job site. Such visitors may be required to sign Owner-approved waivers and releases.

7.10 Signage

All signage or other graphics must be approved by Architect prior to application on equipment, temporary buildings, trailers, and/or other Project structure. The Contractor shall immediately remove any signage or graphics at Contractor's cost upon request of Architect.

7.11 Royalties

The Contractor shall pay for all royalties and license fees, and agrees to defend all suits or claims for infringement of any patent rights involved in the Contractor's Work and to defend, indemnify and hold Owner harmless from and against any loss, cost or expense including attorney's fees arising out of or in connection with any such infringement.

7.12 Dust Control

Contractor shall be responsible for dust control during any excavation, grading, trenching and backfilling operations in accordance with federal, state and county guidelines. Contractor shall keep public streets free of mud/debris from Contractor's own vehicles.

7.13 Protection of Concrete Slabs

The Contractor recognizes that the concrete slab is the finished floor product in parts of the Project and that it may not receive floor covering. The Contractor agrees to take all precautions and provide all protection necessary to ensure that the concrete floor will not be marked, spotted, stained or damaged in any way from Contractor's operations. This includes drop cloths to protect the surface from paint, drywall compound, etc; diapering of engines, differentials, transmissions and other equipment and machinery components with the potential to leak oils and fluids; boots on rubber-tired equipment if tires are leaving marks on the floor; and prohibiting the use of layout marking material that will permanently mark the slab.

7.14 Protection of Materials and Equipment

Contractor shall protect all material and equipment, which has not yet been incorporated into the Project. Where installed materials or equipment is subject to weather damage, Contractor shall provide protection until the Project is sufficiently complete to avoid damage.

7.15 Contractor Personnel

The Contractor shall provide an on-site representative, superintendent(s) and/or foremen approved by Owner. The Contractor may replace such approved personnel only with Owner-approved substitute personnel. The Contractor shall remove and replace its personnel if so requested by Owner. The Contractor shall at all times enforce strict discipline and good order among its employees, and shall not employ on the Work any person considered by the Owner to be unfit or not skilled in the Work assigned. The Contractor shall keep its employees from socializing on the site after normal work hours and from fraternizing at any time with staff, students, parents and other persons who are at the school or site. The Contractor (Company) shall not be owned, operated, or managed by a registered sex offender who has been convicted of a sex offense against a minor in accordance with Iowa Code 692A.113. In addition, the Contractor shall not permit an employee, Subcontractor (Company) owned, operated, or managed by, or Subcontractor employee who is a registered sex offender convicted of a sex offense against a minor on real property of the schools of the Owner in accordance with Iowa Code 692A.113. The Contractor shall further acknowledge and certify services provided under this Contract comply with Iowa Code 692A.113, and shall fully execute and deliver copy of 'Acknowledgment and Certification' with Bid Form.

7.16 Drinking Water

Contractor shall provide drinking water, cups and ice for its employees.

7.17 Jobsite Meetings

Contractor's representative shall attend one pre-construction jobsite meeting and any additional meetings as required by the Architect or Owner. Contractor shall present current and future needs, including interface requirements, time, sequences, deliveries, access, site utilization, etc.

Section 8. Safety.

8.1 Safety Precautions

The Contractor shall take all necessary safety precautions with respect to performance of the Contractor's Work and shall comply with applicable safety measures and with applicable laws, ordinances, rules, regulations, and orders of public authorities and with the requirements of the Contract Documents for the safety of persons and property. The Contractor shall comply with all Project Safety Requirements listed in this Section.

8.2 Safety Protections

The Contractor and its employees must, at a minimum, comply with all applicable laws, codes, rules, regulations and requirements pertaining to the safe performance of its Work, including the Federal Occupational Safety and Health Act (OSHA). Contractor agrees to provide protection as is necessary to protect all persons and property from Contractor's operations. Contractor shall effectively secure and protect the Contractor's Work. The Contractor shall furnish all safety equipment required to safely perform the Contractor's Work.

8.3 Assumption of Safety Responsibility

The Contractor agrees and acknowledges that it has assumed full responsibility and liability for safety precautions in connection with the construction means, methods, techniques, sequences, supervision and procedures pertaining to Contractor's Work.

8.4 Safety Indemnity

In addition to, and not in limitation of, any other obligations herein, the Contractor hereby agrees to indemnify and hold the Owner harmless from and against all claims, costs, damages, fines and expenses, including attorneys' fees, arising from or in connection with Contractor's operations and the results of such operations, including any claims for damages by Contractor's employees. Without limiting the generality of the foregoing, Contractor agrees to reimburse Owner for all OSHA fines and attorneys' fees incurred by Owner or Owner's other contractors as a result of or arising out of Contractor's Work.

8.5 Safety Requirements

The following minimum safety requirements are also applicable to and will be enforced on this Project. Specific questions regarding these safety requirements should be directed to the Owner's Representative.

8.5.1 Unsafe Conditions

BE ALERT! 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. All unsafe conditions shall be reported immediately to the Owner and Contractor's Project Site Supervisor. No person is required to work under any unsafe conditions. OSHA Standard 1926.20.

8.5.2 Reporting Injuries

All accidents or injuries deemed Recordable, Lost Time or Restricted by OSHA, or non-injury incidents resulting in property damage or high potential for severe injury shall be reported immediately to the Owner, giving full details and identifications and statements of any witnesses. The Contractor shall be responsible for completing a written injury and/or incident investigation

in accordance with referenced procedures and providing such report to the Owner in a timely manner.

8.5.3 Project Safety Supervision

The Owner has the authority to remove any of the Contractor's unsafe equipment, tools, scaffolding or other unsafe items, and has the authority to remove any Contractor employees that do not comply with these safety requirements. Contractors that receive two (2) written notices on the Project for failure to follow OSHA safety standards or these safety requirements, may have their payment withheld until such time as the managing principal of the Contractor has met with the Owner and agreed on a plan to eliminate future safety violations. Continuing violations of these safety requirements may also result in termination of the Contractor's continuing performance under this Agreement.

8.5.4 Fall Protection

All work performed at elevations over 6 feet must have a 100 percent fall protection or prevention system. This includes, but is not limited to all leading-edge work, iron connecting, working off of elevated work platforms (scaffoldings), and residential type construction. Only methods referenced and meeting or exceeding OSHA Standard 1926 Subpart M shall be used. "Monitors" or "safety zones" are NOT an acceptable means of fall protection. The Contractor is responsible for enforcement of its fall protection plan.

8.5.5 Barricades

Barricades or covers meeting OSHA Standards are required around excavations, holes or openings in floors or roofs, edges of roofs, elevated platforms, around certain types of overhead work and whenever necessary to warn or prevent persons or equipment from falling.

8.5.6 GFCI Protection

All work using cords or power tools must utilize Ground Fault Circuit Interrupter (GFCI) protection. Only authorized electricians shall perform electrical work.

8.5.7 Excavations

Excavations must be sloped, shored or shielded, and must meet all other OSHA requirements. Before digging in any location, the Contractor must check to ensure that all underground utilities have been located and properly marked.

8.5.8 Lockout/Tag

Contractor's employees shall comply with OSHA Standard 1910.147 lockout/tag procedures and with NFPA Standard 70E when working on energized systems or equipment. Contractor agrees that only authorized journeyman electricians shall perform the initial lock out/tag out procedure and shall provide evidence of such authorization upon request of Construction Manager.

8.5.9 Personal Protective Equipment

All of the Contractor's employees on the Project site must use proper personal protective equipment (PPE) and clothing suited to the Work and the Work environment. The Contractor is responsible for providing its personnel the proper PPE which includes: gloves where applicable; no dangling or loose clothing or jewelry may be worn around moving machinery; shirts which cover the shoulder, work boots or shoes and long pants are required; hardhats must be worn by all workers, supervisors, clients, visitors and vendors at all times; eye and face protection (meeting ANSI Z87.1-1989 standards) must be worn at all times on the Project site. Additional forms of eye protection may also be required as prescribed by OSHA standards and manufacturer

recommendations. Steps must be taken to protect other workers and the public from eye injury whenever tasks producing flying chips or particles are being performed; respirators will be used when an employee is exposed to airborne hazards (proper training, physical exam and a fit test are required; 1910.134); hearing protection in the form of earmuffs or approved ear plugs shall be worn on all high noise level jobs as required; no radios will be allowed on the Project site (other than in office) other than 2-way radios for jobsite communication; and Contractor shall maintain appropriate first aid equipment and supplies in its Work areas at all times.

8.5.10 Housekeeping

Contractor shall maintain good housekeeping in and around its Work areas at all times. Stack materials so that safe clearances are maintained and falling is prevented. Keep all walkways and aisles clear. Place cords and air hoses to one side to allow safe passage. Remove loose overhead material, dispose of garbage and remove oil and water spillage. Immediately remove or bend over nails protruding from lumber. Secure all stored or loose materials (especially on roof) to prevent it from becoming airborne.

8.5.11 Illumination

All of Contractor's Work areas shall be properly illuminated at all times.

8.5.12 Ventilation

All of Contractor's employees performing confined space work shall be properly trained. All necessary requirements contained in OSHA Standard 1910.146 must be met. Contractor shall maintain proper ventilation in enclosed areas when using equipment.

8.5.13 Ladders

Contractor shall train its employees in the safe use of ladders and scaffolding as required, including the requirement that all ladders extend 3 feet above the applicable access point and be secured. No aluminum ladders shall be used on the Project. Defective ladders and scaffold components shall be tagged and removed from service.

8.5.14 Tools and Equipment

Tools, equipment, trucks, loaders, backhoes, cranes and forklifts shall be used, operated and maintained properly to prevent injury. No Contractor employee shall operate any equipment unless specifically authorized and trained to do so. Powder-actuated tools require certified training before use. Power tools shall be operated only by authorized personnel and with guards in-place. Hand tools such as hammers and chisels shall be properly used and maintained. All slings, choker and rigging equipment shall be free of defects. All hooks must have safety latches or keepers. Taglines shall be used to control loads when their use does not create an additional hazard. Tampering with or unauthorized use or removal of fire extinguishers from assigned locations is prohibited. All of Contractor's tools and equipment must be inspected daily by Contractor before use. Damaged tools shall be tagged "DO NOT USE" and removed from service immediately. Documentation of training and inspections shall be provided to the Construction Manager upon request.

8.5.15 Safety Plan

A written Project specific safety plan and/or a Job Safety Analysis shall be performed for all high hazard or non-routine work. Such plans shall be completed and provided to the Owner and Architect before the work begins.

8.5.16 Safety Meetings

Attendance at requested safety meetings is required for all Contractor personnel and documentation of meetings is mandatory.

8.5.17 Hazard Communication

If Contractor or its subcontractors bring any material to the Project site which requires notification to employees of the Contractor, Owner or its other contractors, suppliers, vendors, materialmen and/or local fire departments or other authorities, in conformance with applicable environmental, hazardous substance, right to know, or similar laws, the Contractor shall provide material safety data sheets to be available at the Project site for inspection and reference prior to delivery of such products or materials to the job-site. Contractor shall provide appropriate training for its job-site personnel. The Contractor shall maintain a hazardous material program, including proper placarding of all locations where hazardous materials are located, in conformance with the aforementioned laws.

8.5.18 Unsafe Acts

Contractor's employees who report for work under the influence of intoxicants or narcotics or engage in the consumption of them on the Project site will be removed from the Project site. Contractors shall also comply with the Iowa Smoke Free Air Act while on Owner property and shall not smoke any tobacco product while on Owner grounds which also includes in Contractor vehicles while parked on Owner property. Contractor's employees who engage in horseplay, fistfights, unsafe acts, whistling, yelling at the public, making obscene gestures or any other inappropriate behavior as determined by the Owner will be removed from the Project site. Weapons of all types, including firearms, are strictly forbidden on the Project site.

8.5.19 Visitors

All of Contractor's visitors to the Project site must check in with the Contractor's Supervisor prior to going on site.

8.5.20 Competent Persons

The Contractor shall identify their OSHA Competent Person for the Work that they perform in either their written safety plan or in a memo form submitted at the beginning of Work and shall immediately notify Owner and Architect in the event the OSHA Competent Person is changed.

Section 9. Claims and Dispute Resolution.

9.1 *Claims Resolution by Agreement*

The Contractor agrees to be conclusively bound by the Architect's decisions on all matters, unless the Contractor disputes such decision in writing within seven (7) calendar days following receipt of Architect's decision. In the event of any dispute, controversy or claim ("Claim") between the Owner and Contractor arising out of or related to the Contract Documents or the breach thereof each party shall promptly notify the other upon discovery of any Claim and shall in good faith meet to resolve the Claim by mutual agreement. Such meeting shall take place within five (5) working days following receipt of written notice, which requests such a Claims meeting. Such notice shall provide full notice of all Claims to be discussed at the meeting, together with substantiating documentation. The Contractor agrees to continue performing all of Contractor's Work notwithstanding the existence of any Claims or the pending resolution thereof. This Section 9 does not require the Owner to make a claim in order to impose liquidated damages in accordance with the Contract Documents.

9.2 Claims Resolution by Alternative Methods

If claims are not resolved by agreement, (i) Owner may pursue such Claims at any time as otherwise permitted or required by the Contract Documents or by law or equity, and (ii) Contractor may pursue all Claims through a single litigation at any time after final acceptance of the Project and prior to the expiration of one year following such final acceptance. Contractor waives all rights to otherwise pursue such Claims and agrees to immediately dismiss with prejudice any litigation filed in contravention of this waiver.

9.3 Other Remedies

This **Section 9** shall not be deemed a limitation of rights or remedies which the parties may have under state mechanics' lien laws, public contract claims laws or under applicable performance bonds or payment bonds. All claims must be reserved in accordance with Section 3.5.

Section 10. Owner's Termination Rights.

10.1 Contractor's Default

If the Contractor fails or neglects to carry out the Contractor's Work in strict compliance with the Contract Documents and fails within a seven (7) day period after receipt of notice from the Owner or such shorter times as may be reasonable under the circumstances to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to any other remedy the Owner may have: correct such default or neglect, or it may notify the surety and request it to assume the obligations of the Contractor within seven (7) days following receipt by Contractor or surety of written notice. In such case an appropriate Change Order or Construction Change Directive shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services and any attorney's fees made necessary by such default, neglect, or failure. If current or future payments thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

10.2 Bankruptcy, Etc.

It is recognized that if Contractor institutes or has instituted against it a case under Title 11 or 13 of the United States Code (Bankruptcy Code), or if it dissolves, dies or otherwise ceases to exist, or if it becomes insolvent or unable to pay its debts as they become due, such events could impair or frustrate Contractor's performance of this Agreement. Accordingly, it is agreed that upon the occurrence of any such event, Owner shall be entitled to make a written request of Contractor or its successor or surety, if any, to provide adequate assurances of future performance. Failure to comply with such Owner's request with 48 hours of delivery of the written request shall entitle Owner, in addition to any other rights and remedies provided to Owner by this Agreement or by law or equity, to (i) supplement the Contractor's performance with additional material, supplies, equipment or labor, pay for same and deduct the amount so paid from any money then or thereafter due Contractor (if such offset is not sufficient, Contractor shall pay any deficiency promptly upon demand), and/or (ii) terminate Contractor's continuing performance under the Agreement. Such termination of performance shall be deemed to be for cause, and Section **10.4** shall apply thereto.

10.3 Labor Relations

The Contractor shall fully abide by all labor agreements and jurisdictional agreements and decisions presently in force or subsequently executed with or by the Contractor. However, should there be a work stoppage, slowdown or any type of interference with the performance of Contractor's Work resulting from any labor dispute involving Contractor's employees, agents or subcontractors, which in the reasonable judgment of the Owner will cause, or threatens to cause, any delay in the progress of the Contractor's Work, then upon 48 hours' written notice,

the Owner shall have the right to (i) supplement the Contractor's performance with additional material, supplies, equipment or labor, pay for same and deduct the amount so paid from any money then or thereafter due Contractor (if such offset is not sufficient, Contractor shall pay any deficiency promptly upon demand), and/or (ii) terminate the Contractor's continuing performance under the Agreement. Such termination of performance shall be deemed to be for cause, and item **10.4** shall apply thereto.

10.4 Consequences of Termination for Cause

Upon a termination of Contractor's continuing performance under the Agreement for cause, the Owner may, without limitation of any other Owner's available remedies, proceed as follows: (i) direct the Contractor to immediately leave the site, but to give possession of all materials and supplies at the site or stored off-site, to the Owner for use in completing the Contractor's Work; in the event of such a directive to leave the site, the Contractor agrees to do so immediately, even if it disputes the grounds for the directive; the Owner shall also provide or cause to be provided such other materials, supplies, tools, equipment, machinery, labor, services and other items as may be necessary to complete the Contractor's Work; and/or (ii) by registered or certified mail addressed to the Contractor's surety, if any, require the surety to provide such materials, supplies, tools, equipment, machinery, labor, services and other items as may be necessary to complete the Contractor's Work in strict compliance with the Contract Documents. The Owner shall apply any unpaid balance of the Contract Sum to pay for such completion costs; provided, that the Owner may first require the Contractor or its surety, if any, to fund any anticipated excess completion costs. In all such events, if the unpaid balance of the Contract Sum exceeds the costs of completing the Contractor's Work together with interest on such costs and together with any offsets and deductions available to the Owner, such excess shall be paid to the Contractor. However, if such costs, interest, deductions and offsets exceed such unpaid balance, the Contractor or Contractor's surety shall pay the difference to the Owner upon demand.

10.5 Convenience

The Owner may terminate the Agreement at any time for the convenience of the Owner (i.e., without cause), upon written notice thereof to Contractor. Upon receipt of written notice from the Owner of termination, the Contractor must: (a) cease operation as directed by the Owner in the notice and, if required by the Owner, participate in an inspection of the Work with the Owner and the Architect/Engineer to record the extent of completion thereof, to identify the Work remaining to be completed or corrected, and to determine what temporary facilities, tools, equipment and construction machinery are to remain at the Site pending completion of the Work; (b) complete or correct the items directed by the Owner, and take actions necessary, or that the Owner may direct, for the protection and preservation of any stored materials and equipment and completed Work; (c) unless otherwise directed by the owner, remove its tools, equipment and construction machinery from the Site, and; (d) **except as directed by the Owner, terminate all existing subcontracts and purchase orders related to the Work and enter into no further subcontracts or purchase orders therefore.** In such event, the Contractor shall be entitled to pro-rata payment of the Contract Sum for Contractor's acceptable Work properly and timely performed and completed as of date of termination. If Owner is found to have improperly terminated Contractor's continuing performance under Exhibit D, Sections 10.1, 10.2, or 10.3 Owner shall be deemed to have elected to terminate the Agreement for Owner's convenience under this section.

10.6 Waiver of Damages

In no event shall the Owner be obligated to pay Contractor any damages including anticipatory profit or indirect, special or consequential damages, however caused, and Contractor hereby waives all such Claims. Without limiting the generality of the foregoing, the Contractor specifically agrees that it shall not be entitled to assert, and it hereby waives any Claims in quantum

meruit, interest on disputed claims, and all other damages other than those specifically provided in the Contract Documents. The Contractor further waives any rights, claims, or causes of action against Owner as a result of activities or duties of the Architect in the Architect's administration of the Contract or representations made by the Architect in the Instruments of Service. The Contractor acknowledges any such rights, claims, or causes of action accrue against the Architect and not the Owner and Contractor may seek redress directly from Architect in the event that becomes necessary.

Section 11. Miscellaneous Provisions.

11.1 *Attorney's Fees*

In the event it shall become necessary for either party to institute legal proceedings against the other party for recovery of any amounts due and owing under the Agreement, it is expressly agreed that the prevailing party in any such action shall be entitled to recover from the non-prevailing party all costs, including reasonable attorney's fees, of pre-suit collection attempts, suit, and post judgment or settlement collection including those incurred on appeal.

11.2 *Assignment*

The Owner may assign the Agreement without consent. The Contractor agrees not to assign or sublet the Agreement or any part thereof and not to assign any money due or to become due under the Contract Documents without first obtaining the written consent of the Owner, which consent may be withheld in Owner's sole discretion. Contractor hereby conditionally assigns all of its subcontracts, purchase orders and related agreements to the Owner. Upon termination of Contractor's continuing performance under this Agreement, Owner may exercise its rights to this assignment and assume any such subcontracts, purchase orders or related agreements as it shall select in its sole discretion.

11.3 *Construction*

This Agreement shall not, as a matter of judicial construction, be construed more severely against one of the parties than the other.

11.4 *Entire Agreement*

The Contract Documents represent the entire and integrated agreement between the Owner and Contractor and supersede prior negotiations, representations or agreements, either written or oral. The laws of the state of Iowa, excluding only its principles of conflicts of laws, shall govern the Contract Documents. Venue for any litigation shall be in any State or Federal Court located in Des Moines, Iowa, and the parties agree to limit jurisdiction to such courts for all disputes and claims arising out of or in connection with this Agreement. The parties waive right to trial by jury.

11.5 *Successors*

The Owner and the Contractor, for themselves, their successors, executors, administrators and assigns, hereby agree to the full performance of the covenants of the Contract Documents.

11.6 *Definitions*

For purposes of this Agreement, "delay damages" means any damages incurred or sustained by Owner and/or Contractor due to changes in the Contractor's Work (whether such changes are actual, constructive, additive, deductive, cardinal, major or minor and regardless of the frequency or number thereof), or to acceleration or suspension of the Contractor's Work (either actual or constructive), or to extension of the completion date of the Contractor's Work, or to enlargement of the Contractor's Work (whether due to any changes, acceleration, suspension, delay, hindrance, disruption, interruption, or interference in, with or of the Contractor's Work or otherwise), or to damages as defined by Section 6.5; and "damages" means any additional or

extended costs, expenses, general conditions or overhead (either Project site or home office), lost profits, inefficiency claims, or any other loss or damages whatsoever.

11.7 Survival

All covenants, agreements, indemnities, guarantees and warranties made by Contractor shall survive completion of the Contractor's Work and the performance or termination of the Agreement, and any payment of the Contract Sum in whole or in part.

11.8 Severability

If any term or provision of the Agreement shall be held to any extent to be invalid or unenforceable, the remaining terms and provisions shall remain valid and be enforceable to the fullest extent permitted by law.

11.9 Section Headings

Section headings are inserted merely for the purpose of convenience and do not, expressly or by implication, limit, define, or extend the specific terms of the section so designated.

11.10 Records

In the event that Contractor fails to pay its subcontractors in accordance with this Agreement, or if Contractor's agreement for payment hereunder constitutes a cost plus arrangement, then Owner, upon reasonable notice to Contractor, shall have the right to examine the books and records of Contractor, and Contractor agrees to make such books and records available to Owner at a place mutually agreeable to Owner and Contractor. Further, exercise of Owner's rights hereunder shall not constitute a waiver of Owner's rights hereunder and such examination by Owner shall not operate to stop Owner from exercising any and all of its rights hereunder, provided, however, that Owner agrees to keep any information it obtains by virtue of such audit which would constitute a trade secret or proprietary information of Contractor confidential, subject to applicable law or court order requiring disclosure.

11.11 Self-Performance of Work

All portions of the work related to the installation of the roof membrane shall be performed by the Contractor, utilizing its own organization and work force. No portion of the work related to the installation of the roof membrane may be subcontracted out to any sub-contractor.

END OF DOCUMENT 000640

DOCUMENT 000700 – SEX-OFFENDER ACKNOWLEDGEMENT FORM

_____ (“Company”) is providing services to the West Des Moines
(name) Community School District (“District”) as a vendor,
supplier, contractor, or professional services provider or is operating or managing the operations
of a vendor, supplier, contractor, or professional service provider. The services provided be the
Company may involve the presence of the Company’s employees upon the real property of the
school(s) of the District.

The Company acknowledges that Iowa law prohibits a sex offender who has been convicted of
a sex offense against a minor from being present upon the real property of the schools of the
District or loitering within 300 feet of the real property of the District. The company further
acknowledges that, pursuant to law, a sex offender who has been convicted of a sex offense
against a minor may not operate, manage, be employed by, or act as a contractor, vendor,
supplier, provider of services or volunteer at the schools of the District.

The Company hereby certifies that no one who is an owner, operator or manager of the
Company has been convicted of a sex offense against a minor. The Company further agrees
that it shall not permit any person who is a sex offender convicted of a sex offense against a
minor to provide any services to the District in accordance with the prohibitions set forth above.

Should Company fail to comply at any time before the services by the Company have been fully
completed, Company acknowledges that: 1) any agreement between Company and District may
be terminated without penalty of consequence to District; 2) Company shall immediately remove
employees from District property; and 3) Company shall be responsible to reimburse,
compensate and indemnify the District and any other affected party (including those not a party
to any agreement between District and Company) for any and all costs, damages, and liabilities
for direct or indirect consequences resulting from the Company’s non-compliance. Such
reimbursement shall include District attorney’s fees, including attorney’s fees involving any
threatened or potential action involving the Company.

This Acknowledgement and Certification is to be construed under the laws of the State of Iowa.
If any portion hereof is held invalid, the balance of the document shall, notwithstanding, continue
in full legal force and effect.

In signing this Acknowledgement and Certification, the person signing on behalf of the Company
hereby acknowledges that he/she has read this entire document, that he/she understands its
terms, and that he/she not only has the authority to sign the document on behalf of the
Company, but has signed it knowingly and voluntarily.

Dated: _____ Company: _____

By (signature): _____
(print name): _____

Title: _____
authorized representative

END OF DOCUMENT 000700

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SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Project information.
 - 2. Regulatory Requirements.
 - 3. Work covered by Contract Documents.
 - 4. Phased Construction.
 - 5. Work under separate contracts.
 - 6. Owner-Furnished Products.
 - 7. Access to site.
 - 8. Coordination with occupants.
 - 9. Work restrictions.
 - 10. Specification and drawing conventions.
- B. Related Requirements:
 - 1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of Owner's facilities.

1.3 PROJECT INFORMATION

- A. Project Identification: WDMCS Valley Southwoods Roofing Replacement
 - 1. Project Location: 625 S 35th St; West Des Moines, Iowa 50265
- B. Owner: West Des Moines Community School District
- C. Design Professionals: Architect: MELEE, LLC (dba: Studio MELEE)

1.4 REGULATORY REQUIREMENTS

- A. The following regulations are applicable to this project:
 - 1. 2021 International Building Code (IBC)
 - 2. 2021 International Fire Code (IFC) - (with local amendments)
 - 3. 2020 National Electric Code (NEC)
 - 4. 2012 International Energy Conservation Code (IECC)
 - 5. 2021 International Mechanical Code (IMC) w/ amendments
 - 6. 2021 Uniform Plumbing Code (UPC) w/ amendments
 - 7. 2010 ADA Standards - Americans with Disabilities Act Accessibility Guidelines
 - 8. 2017 ANSI A117.1
- B. The contractor shall obtain and pay for building and inspection permits required for construction and become familiar with all current applicable building codes.

1.5 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and consists of the following:
- B. The Project includes the following Membrane/Metal System Roof Replacement Projects at Valley Southwoods, located at 625 S 35th St; West Des Moines, Iowa 50265.
 - 1. Tear off and replacement of existing roofing system with new vapor barrier, insulation, coverboard, and membrane roofing assembly. New assembly will include a thirty (30) year manufacturer's warranty & five (5) year contractor installation warranty.
 - 2. All sheet metal copings, flashings, edge, fascia, boots and related accessories will be removed and replaced with new finished metal. Manufacturer's twenty (20) year finish warranty shall be included for these components.

Valley Southwoods = Approximately 38,089 square feet of roofing replacement.

1.1 PHASED CONSTRUCTION

- A. The Work shall be conducted in one phase. See specification section 000300 "Project Schedule" for a timeline of the project. All Work shall be substantially complete and ready for occupancy by July 31st, 2026 with final completion by August 14th, 2026.
- B. Before commencing Work, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates, including time for move-out and move-in dates of Owner's personnel, for all phases of the Work.

1.2 OBSERVATION OF POTENTIAL DAMAGES

- A. On August 19th, 2022 the West Des Moines Community School (WDMCS) District had extensive roof damage to several district buildings as a result of a district-wide hail, wind, and rain event. Throughout demolition, the Contractor shall observe all roofing system surfaces and components for any indications of roof damage caused by hail. If

any damage is observed, immediately stop work, document/photograph the damage, and report findings to the Owner (District) and Architect.

1.3 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts. Coordinate schedule and timing between this Contract and other contracts.

1.4 OWNER-FURNISHED PRODUCTS

- A. Owner will furnish products indicated. The Work includes receiving, unloading, handling, storing, protecting, and installing Owner-furnished products.
- B. Owner-Furnished Products:
 - 1. Furniture: Owner will be responsible for furnishing and installing all furniture and furnishings not attached to the building, miscellaneous items not detailed on the construction documents.

1.5 ACCESS TO SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits: Confine construction operations to the areas shown on the Drawings.
 - 2. Driveways, Walkways and Entrances: Keep driveways, parking lots, loading areas, and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials unless otherwise agreed upon by Owner.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weather tight condition throughout construction period. Repair damage caused by construction operations.

1.6 COORDINATION WITH OCCUPANTS

- A. Owner Limited Occupancy of Completed Areas of Construction (May 25th, 2026 through July 31st, 2026): Owner reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and limited occupancy shall not constitute acceptance of the total Work.
 - 1. Architect will prepare a Certificate of Substantial Completion prior to Owner acceptance of the completed Work.
 - 2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited Owner occupancy.
 - 3. Before limited Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will operate and maintain mechanical and electrical systems serving occupied portions of Work.
 - 4. On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of Work.
- B. Full Owner Occupancy (Prior to May 25th, 2026 and then May 25th, 2026 through August 14th, 2026): Owner will occupy site and existing building through the duration of the construction period, with the exception of areas under construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.
 - 1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.
 - 2. Notify Owner not less than (7) seven days in advance of activities that will affect Owner's operations.

1.7 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
 - 1. Notify Owner not less than (2) two days in advance of proposed utility interruptions.

- C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.
 - 1. Notify Owner not less than (2) two days in advance of proposed disruptive operations.
- D. Nonsmoking Building: Smoking is not permitted within the building or on public property.
- E. Controlled Substances: Use of tobacco products and other controlled substances on public property is not permitted.
- F. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

1.8 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.
- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
 - 1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 - 2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and/or as scheduled on Drawings.
 - 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

END OF SECTION 011000

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

SUMMARY
Section 011000 - Page 6

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SECTION 012000 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Requirements:
 - 1. Section 000640 "Exhibit D: Standard Terms and Conditions".
 - 2. Section 016300 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
- C. Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time. These will either be issued in the form of an "Architect's Supplemental Instruction (ASI)", a "Architect's Supplemental Drawing (ASD)", or both.

1.3 MODIFICATIONS

- A. No employee or agent of Owner, is authorized to direct any changes in Contractor's Work by oral order except in emergency affecting persons or property. Changes to the Contractor's Work and to the Agreement may be made only by a written directive or change order to the Agreement ("Modification") signed by the Owner and Architect/Engineer. The Modification shall be on Owner-approved forms. The Contractor, prior to the commencement of any revisions, shall submit promptly to the Architect, in writing, a Claim for adjustment to the Contract Sum and Contract Time for such revised Contractor's Work. If Owner accepts such Claim, any agreed adjustment to the Contract Sum and/or Contract Time shall be fully reflected in the Modification. If Owner does not fully accept such Claim, any adjustment to the Contract Sum and/or Contract Time shall be reflected in the Modification to the extent not in dispute, and any such adjustments, which are in dispute, shall be reserved by express statement in the Modification. Notwithstanding any such dispute, the Contractor shall nonetheless

comply with the Modification as directed by the Architect, and such dispute shall be resolved as provided in Section 000640 "Exhibit D: Standard Terms and Conditions".

1.4 OWNER CHANGES

- A. The Owner may make changes in the Contractor's Work by issuing amendments, addenda, supplemental instructions, change directives, or change orders signed by the Owner and Architect/Engineer. Unless otherwise directed by the Architect, the Contractor shall not thereafter order materials or perform Contractor's Work that would be inconsistent with such changes. Such changes will be promptly evidenced by a Modification to the Agreement, the Contract Sum and the Contract Time being adjusted accordingly.

1.5 CONTRACTOR CHANGES

- A. The Contractor shall make no changes to the Contractor's Work except as set forth in a Modification signed by Owner and Architect/Engineer. The Contractor agrees to complete the Contractor's Work in strict compliance with the Contract Documents. The Contractor shall notify the Architect of any requests for changes within seven (7) calendar days following Contractor's discovery of any circumstances permitting a change. Any request made after seven (7) calendar days shall be the responsibility of the Contractor, and Contractor waives all Claims therefore.

END OF SECTION 012000

SECTION 012100 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Requirements:
 - 1. Section 012500 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.

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 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule.
 - 1. Coordinate 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. Submittal schedule.
 - c. Items required to be indicated as separate activities in Contractor's construction schedule.
 - 2. Submit the schedule of values to Architect at earliest possible date, but no later than five (5) days before the date scheduled for submittal of the initial Application for Payment.

- B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the schedule of values:
 - a. Project name and location.
 - b. Name of Architect.
 - c. Contractor's name and address.
 - d. Date of submittal.
 2. Arrange schedule of values consistent with format of continuation sheet, AIA Document G703-1992.
 3. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:
 - a. Related Specification Section or Division.
 - b. Description of the Work.
 - c. Name of subcontractor.
 - d. Name of manufacturer or fabricator.
 - e. Name of supplier.
 - f. Change Orders (numbers) that affect value.
 - g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
 - h. Separate all item listed as follows:
 - 1) Labor.
 - 2) Materials.
 - 3) Equipment.
 4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of contents. Provide multiple line items for principal subcontract amounts in excess of (5%) five percent of the Contract Sum.
 5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
 6. 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.
 - a. Differentiate between items stored on-site and items stored off-site. Include evidence of acquisition, storage, and insurance for all items stored off-site.
 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. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.
9. Schedule Updating: Update and resubmit the schedule of values before each of the Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.
10. Submit updated project schedule with each Application for Payment.

1.5 APPLICATIONS FOR PAYMENT

- A. Based upon Contractor's applications for payment submitted to the Architect on Owner-approved forms. The Owner shall make progress payments to the Contractor on account of the Contract Sum, as provided herein.
- B. Provided Contractor's application for payment is received by the Architect not later than the 25th of the month, the Architect shall include the Contractor's Work covered by that application in the next application for payment which the Architect submits to the Owner. If the Contractor's application for payment is received after such date, the Contractor's Work covered by it shall be included by the Architect in the following month's application for payment that the Architect submits to the Owner.
- C. Contractor's application for payment shall be based upon the most current Schedule of Values, and shall indicate the percentage of completion of each portion of the Contractor's Work as of the end of the period covered by the Contractor's application for payment.
- D. The amount of each progress payment shall be computed by determining that portion of the Contract Sum properly allocable to Contractor's Work which has been properly and timely completed, as determined by multiplying the percentage completion of each such portion of the Contractor's Work by the share of the total Contract Sum allocated to that portion of the Contractor's Work in the most current Architect-approved Schedule of Values, less 3% retainage. There shall then be subtracted the aggregate of previous payments made by the Owner and any other amounts to be properly deducted from or offset or back charged against such progress payment, as permitted under the Contract Documents.
- E. Before Contractor starts Work on site and receives payment, the following items must be received by the Architect; Signed Contract Agreement, complete and correct insurance certificates, performance and payment bonds, detailed Schedule of Values breakdown acceptable to the Architect, Federal Tax Identification number, Contractor's state license number, any business license or registration required by the governing

municipality, and any other information or documentation requested by the Owner at or before the Pre-Construction Meeting.

- F. Failure to timely provide required insurance certificates, bonds or licenses, Schedule of Values, subcontractor information, submittals, progress reports, record Drawings, closeout items, or other information and items specified will be grounds for the Architect to suspend any or all progress or final payments, without interest, until the required items are so provided.
- G. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by Owner.
- H. Application for Payment Forms: AIA Document G702-1992. Submit forms for approval with initial submittal of schedule of values.
- I. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.
 - 1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
 - 2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
 - 3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- J. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.
 - 1. Provide certificate of insurance, evidence of transfer of title to Owner, and consent of surety to payment, for stored materials.
 - 2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
 - 3. Provide summary documentation for stored materials indicating the following:
 - a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
 - b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
 - c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.
- K. Transmittal: Submit (1) One signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt. Transmittal shall include waivers of lien and similar attachments.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- L. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
 2. When an application shows completion of an item, submit conditional final or full waivers.
 3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 4. Submit final Application for Payment with or preceded by conditional final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
- M. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
 2. Schedule of values.
 3. Contractor's construction schedule (preliminary if not final).
 4. Products list (preliminary if not final).
 5. Submittal schedule (preliminary if not final).
 6. List of Contractor's staff assignments.
 7. List of Contractor's principal consultants.
 8. Copies of building permits.
 9. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
 10. Initial progress report.
 11. Report of preconstruction conference.
 12. Certificates of insurance and insurance policies.
 13. Performance and payment bonds.
 14. Data needed to acquire Owner's insurance.
- N. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing one-hundred (100) percent (%) completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificate(s) of Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- O. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that fees, and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.

END OF SECTION 012100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.
- B. Related Requirements:
 - 1. Section 012500 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
 - 2. Section 014000 "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work, as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.
- B. Owner reserves 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 surveyor acceptable to Contractor.
- C. List of Unit Prices: A schedule of unit prices is included at the end of this Section.
 - 1. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

2. If no unit prices are listed in the schedule, unit prices are not currently requested for the project. This Section should therefore be considered a placeholder for potential future unit prices which may be added via addenda.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

- A. Unit Price #1: Provide hourly rate in dollars per hour (\$/hr) for contractor labor.
- B. Unit Price #2: Provide cost per square foot (\$/sf) for the replacement of metal roof deck.
- C. Unit Price #3: Provide cost per square foot (\$/sf) for the replacement of plywood sheathing.
- D. Unit Price #4: Provide cost per square foot (\$/sf) for the replacement of exterior gypsum soffit. Note: The base bid shall include the soffit replacement area (approximately 630 s.f.) shown on sheets AD1.4 & A1.4. The unit price shall be only used for additional replacement beyond the base bid amount. Adjustments to the contract sum shall be made based on actual quantities installed.

END OF SECTION 012200

SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for alternates.

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 to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
 - 1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
 - 2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

- A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
 - 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.
- B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

- C. Execute accepted alternates under the same conditions as other work of the Contract.
- D. Schedule: A schedule of alternates is included at the end of this Section.
 - 1. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.
 - 2. If no alternates are listed in the schedule, alternates are not currently requested for the project. This Section should therefore be considered a placeholder for potential future alternates which may be added via addenda.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012300

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**CHANGE ORDER FORM
Section 012500 - Page 1**

DOCUMENT 012500 – CHANGE ORDER FORM

**CHANGE ORDER (C.O.) NUMBER:
DATE OF C.O. ISSUANCE:**

ORIGINAL AGREEMENT DATE:

PROJECT

WDMCS Valley Southwoods Roofing Replacement
625 S 35th St; West Des Moines, Iowa 50265

OWNER

West Des Moines Community Schools
Attn: Tim Simpkins
3550 Mills Civic Parkway
West Des Moines, Iowa 50265

CONTRACTOR

THE AGREEMENT IS CHANGED AS FOLLOWS (DESCRIPTION):

ORIGINAL AGREEMENT CONTRACT SUM: \$
NET CHANGE OF PREVIOUS C.O.s: \$
CONTRACT SUM PRIOR TO THIS C.O.: \$
C.O. WILL CHANGE CONTRACT SUM BY: \$
NEW CONTRACT SUM AFTER THIS C.O.: \$

**CONTRACT TIME CHANGED BY THIS C.O.:
NEW SUBSTANTIAL COMPLETION DATE:**

ARCHITECT

CONTRACTOR

OWNER

BY (SIGNATURE)

BY (SIGNATURE)

BY (SIGNATURE)

PRINTED NAME

PRINTED NAME

PRINTED NAME

DATE

DATE

DATE

Change Order form is not considered valid until signed by the Architect, Contractor, and Owner.

END OF DOCUMENT 012500

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**CHANGE ORDER FORM
Section 012500 - Page 2**

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SECTION 013000 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General coordination procedures.
 - 2. Coordination drawings.
 - 3. Requests for Information (RFIs).
 - 4. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
- C. Related Requirements:
 - 1. Section 017000 "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 2. Section 017100 "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Owner, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 - 1. Name, address, and telephone number of entity performing subcontract or supplying products.

2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within fifteen (15) days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room and in temporary field office. Keep list current at all times.

1.5 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, 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 to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. 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.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities 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 Contractor's 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. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

- D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
- B. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:
 - 1. Architect may furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files.
 - a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
 - b. Prior to the Contractor receiving files. The contractor shall execute a digital media agreement with the Design Profession, if requested.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI to the Architect in the form specified.
- B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
 - 1. Project name.
 - 2. Project number.
 - 3. Date.
 - 4. Name of Contractor.
 - 5. Name of Architect.
 - 6. RFI number, numbered sequentially.
 - 7. RFI subject.
 - 8. Specification Section number and title and related paragraphs, as appropriate.
 - 9. Drawing number and detail references, as appropriate.
 - 10. Field dimensions and conditions, as appropriate.
 - 11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 - 12. Contractor's signature.
 - 13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.

- a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
- C. Architect's Action: Architect will review each RFI, determine action required, and respond. Allow five (5) working days for response for each RFI. RFIs received by Architect after 1:00 p.m. will be considered as received the following working day.
 1. Architect's action may include a request for additional information, in which case the time for response will date from time of receipt of additional information.
 2. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012000 "Contract Modification Procedures."
 - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify the Owner and Architect in writing within ten (10) days of receipt of the RFI response.
- D. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number.
 1. Project name.
 2. Name and address of Contractor.
 3. Name and address of Architect
 4. RFI number including RFIs that were returned without action or withdrawn.
 5. RFI description.
 6. Date the RFI was submitted.
 7. Date response was received.

1.8 PROJECT MEETINGS

- A. General: General Contractor shall schedule and conduct meetings and conferences at Project site unless otherwise indicated.
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
 2. Agenda: Entity conducting meeting will prepare the meeting agenda & distribute the agenda to all invited attendees.
 3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect within three (3) days of the meeting.
- B. Preconstruction Conference: General Contractor shall schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than fifteen (15) days after execution of the Agreement.
 1. Conduct the conference to review responsibilities and personnel assignments.

2. Attendees: Authorized representatives of Owner, General Contractor, Architect, Prime Contractors and their superintendents; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Lines of communications.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for RFIs.
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of record documents.
 - m. Use of the premises and existing building.
 - n. Work restrictions.
 - o. Working hours.
 - p. Owner's occupancy requirements.
 - q. Responsibility for temporary facilities and controls.
 - r. Procedures for moisture and mold control.
 - s. Procedures for disruptions and shutdowns.
 - t. Parking availability.
 - u. Office, work, and storage areas.
 - v. Equipment deliveries and priorities.
 - w. First aid and job-site safety.
 - x. Security.
 - y. Progress cleaning.
 4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Pre-installation Conferences: General Contractor shall schedule and conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Owner and Architects of scheduled meeting dates.
 2. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 3. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.

4. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Project Closeout Conference: General Contractor shall schedule and conduct a project closeout conference, at a time convenient to Owner, Sub-Contractors and Architect, but no later than fifteen (15) days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
 2. Attendees: Authorized representatives of Owner, Architect, Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
 - a. Preparation of record documents.
 - b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
 - c. Submittal of written warranties.
 - d. Requirements for preparing operations and maintenance data.
 - e. Requirements for delivery of material samples, attic stock, and spare parts.
 - f. Requirements for demonstration and training.
 - g. Preparation of Contractor's punch list.
 - h. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
 - i. Owner's partial occupancy requirements.
 - j. Installation of Owner's furniture, fixtures, and equipment.
 - k. Responsibility for removing temporary facilities and controls.
 4. Minutes: Entity conducting meeting will record and distribute meeting minutes.
- E. Progress Meetings: General Contractor shall conduct regular progress meetings at appropriate intervals. Meetings shall be conducted every two (2) weeks unless otherwise agreed to by the Owner and Architect.
1. Coordinate dates of meetings with preparation of payment requests.
 2. Attendees: In addition to representatives of Owner, Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
 3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or

behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period.
- b. Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Progress cleaning.
 - 10) Quality and work standards.
 - 11) Status of correction of deficient items.
 - 12) Field observations.
 - 13) Status of RFIs.
 - 14) Status of proposal requests.
 - 15) Pending changes.
 - 16) Status of Change Orders.
 - 17) Pending claims and disputes.
 - 18) Documentation of information for payment requests.
4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
 - a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

END OF SECTION 013000

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SECTION 013100 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Requirements:
 - 1. Section 012100 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
 - 2. Section 017200 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 3. Section 017300 "Operation and Maintenance Data" for submitting operation and maintenance manuals.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Architect's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Architect's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
- C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

- D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

- A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Architect and additional time for handling and reviewing submittals required by those corrections.
 - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
 - 2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
 - a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
 - 4. Format: Arrange the following information in a tabular format:
 - a. Scheduled date for first submittal.
 - b. Specification Section number and title.
 - c. Submittal category: Action; informational.
 - d. Name of subcontractor.
 - e. Description of the Work covered.
 - f. Scheduled date for Architect's final release or approval.
 - g. Scheduled date of fabrication.
 - h. Scheduled dates for purchasing.
 - i. Scheduled dates for installation.
 - j. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

- A. Digital Data Files: Electronic digital data files of the Contract Drawings may be provided for Contractor's use in preparing submittals.
 - a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
 - b. Prior to the Contractor receiving files. The contractor shall execute a digital media agreement with the Design Profession, if requested.

- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
 - 3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
 - 4. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
 - 1. Initial Review: Allow ten (10) days for initial review of each submittal by Architect. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
 - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 - 3. Resubmittal Review: Allow fifteen (15) days for review of each resubmittal.
 - 4. Sequential Review: Where sequential review of submittals by the Architect's consultants, Owner, or other parties is indicated, allow twenty-one (21) days for initial review of each submittal.
- D. Options: Identify options requiring selection by Owner and Architect.
- E. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
- F. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are either marked with "reviewed with comments, no resubmittal required" or "reviewed without comment" from/with the Architect's stamp.

- G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
 - 1. Use for Construction: Retain complete copies of submittals on Project site. Use only final submittals that are either marked with "reviewed with comments, no resubmittal required" or "reviewed without comment" from/with the Architect's stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

- A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
 - 1. Submit electronic submittals via email as PDF electronic files.
 - a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
 - 2. Action Submittals: Submit three (3) paper copies of each submittal unless otherwise indicated.
 - 3. Informational Submittals: Submit three (3) paper copies of each submittal unless otherwise indicated.
 - 4. Certificates and Certifications Submittals: Provide a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 - a. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
 - b. Provide a notarized statement on original paper copy certificates and certifications where indicated.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard published 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. Manufacturer's catalog cuts.
 - b. Manufacturer's product specifications.
 - c. Standard color charts.

- d. Statement of compliance with specified referenced standards.
 - e. Testing by recognized testing agency.
 - f. Application of testing agency labels and seals.
 - g. Notation of coordination requirements.
 - h. Availability and delivery time information.
- 4. For equipment, include the following in addition to the above, as applicable:
 - a. Wiring diagrams showing factory-installed wiring.
 - b. Printed performance curves.
 - c. Operational range diagrams.
 - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
- 5. Submit Product Data before or concurrent with Samples.
- 6. Submit Product Data in the following format:
 - a. PDF electronic file.
 - OR
 - b. Three (3) paper copies of Product Data unless otherwise indicated.
- 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, unless submittal based on Architect's digital data drawing files is otherwise permitted.
 - 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Identification of products.
 - b. Schedules.
 - c. Compliance with specified standards.
 - d. Notation of coordination requirements.
 - e. Notation of dimensions established by field measurement.
 - f. Relationship and attachment to adjoining construction clearly indicated.
 - g. Seal and signature of professional engineer if specified.
 - 2. Submit Shop Drawings in the following format:
 - a. PDF electronic file.
 - OR
 - b. Three (3) paper copies of each shop drawing unless otherwise indicated.
- D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
 - 1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of applicable Specification Section.
 - e. Specification paragraph number and generic name of each item.
3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
4. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit one (1) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line.
6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: 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.
 - a. Number of Samples: Submit three (3) sets of Samples.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

- E. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
 2. Manufacturer and product name, and model number if applicable.
 3. Number and name of room or space.
 4. Location within room or space.
 5. Submit product schedule in the following format:
 - a. PDF electronic file.
OR
 - b. Three (3) paper copies of Product Schedule unless otherwise indicated.
- F. Coordination Drawing Submittals: Comply with requirements specified in Section 013000 "Project Management and Coordination."
- G. Application for Payment and Schedule of Values: Comply with requirements specified in Section 012100 "Payment Procedures."
- H. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
- I. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017100 "Closeout Procedures."
- J. Maintenance Data: Comply with requirements specified in Section 017300 "Operation and Maintenance Data."
- K. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Architects and owners, and other information specified.
- L. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- M. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- N. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- O. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

- P. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- Q. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- R. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. 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.
- S. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- T. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- U. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- V. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- W. Design Data: Prepare and submit 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, if any, used for calculations. Include page numbers.

2.2 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by an Architect or Engineer are specifically required of Contractor by the Contract

Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file and three (3) paper copies of certificate, signed and sealed by the responsible Architect or Engineer, for each product and system specifically assigned to Contractor to be designed or certified by an Architect or Engineer.
 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these delegated design services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Project Closeout and Maintenance Material Submittals: See requirements in Section 017100 "Closeout Procedures."
- C. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

- A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
- B. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect

- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013100

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
 - 1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
 - 3. Requirements for Contractor to provide quality-assurance and -control services required by Architect or authorities having jurisdiction are not limited by provisions of this Section.
 - 4. Specific test and inspection requirements are not specified in 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 substantiate that proposed construction will comply with requirements.
- B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

- C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.
 - 1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.
- D. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
- E. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- F. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- G. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
 - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
- H. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five (5) previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.4 CONFLICTING REQUIREMENTS

- A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- D. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
 - 1. Specification Section number and title.
 - 2. Entity responsible for performing tests and inspections.
 - 3. Description of test and inspection.
 - 4. Identification of applicable standards.
 - 5. Identification of test and inspection methods.
 - 6. Number of tests and inspections required.
 - 7. Time schedule or time span for tests and inspections.
 - 8. Requirements for obtaining samples.
 - 9. Unique characteristics of each quality-control service.

1.6 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
 - 1. Date of issue.
 - 2. Project title and number.
 - 3. Name, address, and telephone number of testing agency.
 - 4. Dates and locations of samples and tests or inspections.
 - 5. Names of individuals making tests and inspections.
 - 6. Description of the Work and test and inspection method.
 - 7. Identification of product and Specification Section.
 - 8. Complete test or inspection data.
 - 9. Test and inspection results and an interpretation of test results.
 - 10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
 - 11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
 - 12. Name and signature of laboratory inspector.
 - 13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of technical representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- C. **Factory-Authorized Service Representative's Reports:** Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement that equipment complies with requirements.
 3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 4. Statement whether conditions, products, and installation will affect warranty.
 5. Other required items indicated in individual Specification Sections.
- D. **Permits, Licenses, and Certificates:** For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

- A. **General:** Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing products or systems 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.
- C. **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.
- D. **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.
- E. **Professional Engineer Qualifications:** A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing

engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
 - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- H. 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.
- I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1. Contractor responsibilities include the following:
 - a. Provide test specimens representative of proposed products and construction.
 - b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
 - d. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
 - e. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
 - f. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.
 - 2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

- J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect.
 2. Notify Architect (7) seven days in advance of dates and times when mockups will be constructed.
 3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
 4. Demonstrate the proposed range of aesthetic effects and workmanship.
 5. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
 - a. Allow (7) seven days for initial review and each re-review of each mockup.
 6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 7. Demolish and remove mockups when directed unless otherwise indicated.
- K. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.

1.8 QUALITY CONTROL

- A. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
 2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
 3. 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.
- B. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
 2. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

- a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
3. Notify testing agencies at least twenty-four (24) hours in advance of time when Work that requires testing or inspecting will be performed.
4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
5. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 01330 "Submittal Procedures."
- D. **Manufacturer's Technical Services:** Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- E. **Retesting/Reinspecting:** Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- F. **Testing Agency Responsibilities:** Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
 1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
 3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
 4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
 5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
 6. Do not perform any duties of Contractor.
- G. **Associated Services:** Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing agencies.
 6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
 7. Security and protection for samples and for testing and inspecting equipment at Project site.
- H. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017000 "Execution Requirements."
- 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 014000

SECTION 014100 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AGA	American Gas Association www.aga.org	(202) 824-7000
AHRI	Air-Conditioning, Heating, and Refrigeration Institute, The www.ahrinet.org	(703) 524-8800
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
ISI	American Iron and Steel Institute www.steel.org	(202) 452-7100

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**REFERENCES
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AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)	
ASHRAE	American Society of Heating, Refrigerating and Air- Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (973) 882-1170
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
CSI	Construction Specifications Institute (The) www.csinet.org www.fluidsealing.com	(800) 689-2900 (703) 684-0300
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
ICBO	International Conference of Building Officials www.iccsafe.org	(888) 422-7233
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980

UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
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C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
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ICC	International Code Council www.iccsafe.org	(888) 422-7233
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ICC-ES	ICC Evaluation Service, Inc. www.icc-es.org	(800) 423-6587 (562) 699-0543
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END OF SECTION 014100

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limitations on work restrictions and utility interruptions.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated.
- B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

- B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
 - 1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
 - 2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
 - 3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
- D. Dust-Control Plan: Submit coordination drawing and narrative that indicates the dust-control measures proposed for use, proposed locations, and proposed time frames. Identify further options if proposed measures are later determined to be inadequate. Include the following:
 - 1. Locations of dust-control partitions at each phase of work.
 - 2. Waste handling procedures.
 - 3. Other dust-control measures.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
- C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails.
- B. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
- C. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches.
- D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

- A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
- B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner Architect and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly.

2.3 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
 - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Permanent HVAC System: Do not use permanent HVAC system for temporary use during construction, without permission from the owner.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
 - 1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
- C. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
 - 1. Toilets: Use of Owner's existing toilet facilities will be prohibited.
- E. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- F. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
 - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
 - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.

- b. Maintain negative air pressure within work area, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
 - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
 - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- G. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
 - 1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
- H. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
- I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
- J. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel.
 - 1. Provide superintendent with cellular telephone for use when away from field office.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Use area within the construction fence or existing parking lot.

- D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
 - 1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
 - 2. Remove snow and ice as required to minimize accumulations.
- E. Project Signs: Provide Project signs for directional use only. Unauthorized signs showing company logos, banners, or other related marketing-style signage, are not permitted.
 - 1. Identification Signs: Provide Project identification signs.
 - 2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
 - 3. Maintain and touchup signs so they are legible at all times.
- F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017000 "Execution Requirements."
- G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- H. Temporary Elevator Use: Use of Owner's existing elevators will not be permitted.
- I. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
 - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Section 011000 "Summary."

- C. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- D. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
 - 1. Extent of Fence: As indicated on Drawings, or as required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
 - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.
- E. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
- F. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- G. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- H. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
 - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
- I. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and Patrons from fumes and noise.
 - 1. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
 - 2. Insulate partitions to control noise transmission to occupied areas.
 - 3. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
 - 4. Protect air-handling equipment.
 - 5. Provide walk-off mats at each entrance through temporary partition.
- J. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.

1. Prohibit smoking.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.5 MOISTURE AND MOLD CONTROL

- A. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
 1. Protect porous materials from water damage.
 2. Protect stored and installed material from flowing or standing water.
 3. Keep porous and organic materials from coming into prolonged contact with concrete.
 4. Remove standing water from decks.
 5. Keep deck openings covered or dammed.
- B. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
 2. Keep interior spaces reasonably clean and protected from water damage.
 3. Periodically collect and remove waste containing cellulose or other organic matter.
 4. Discard or replace water-damaged material.
 5. Do not install material that is wet.
 6. Discard, replace, or clean stored or installed material that begins to grow mold.
 7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
- C. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
 1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
 2. Use permanent HVAC system to control humidity.
 3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
 - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.

- b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
- c. Remove materials that can not be completely restored to their manufactured moisture level within 48 hours.

3.6 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
- C. Operate Project-identification-sign lighting daily from dusk until 12:00am midnight.
- D. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- E. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 - 2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
 - 3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000

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SECTION 016000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
- B. Related Requirements:
 - 1. Section 012200 "Allowances" for products included as part of a unit price.
 - 2. Section 012300 "Alternates" for products selected under an alternate.
 - 3. Section 016300 "Substitution Procedures" for requests for substitutions.
 - 4. Section 014100 "References" for applicable industry standards for products specified.

1.3 DEFINITIONS

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
 - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
 - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
 - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.4 ACTION SUBMITTALS

- A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
 - 2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request.
 - a. Form of Approval: As specified in Section 013100 "Submittal Procedures."
 - b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.
- B. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013100 "Submittal Procedures." Show compliance with requirements.

1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
 - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
 - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
 - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.

2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.7 PRODUCT WARRANTIES

- A.** Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. **Manufacturer's Warranty:** Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. **Special Warranty:** Written warranty required by the Contract Documents to provide specific rights for Owner.

- B.** **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution.

1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.
2. **Specified Form:** When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See other Sections for specific content requirements and particular requirements for submitting special warranties.

- C.** **Submittal Time:** Comply with requirements in Section 017100 "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
 6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
 3. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
- C. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 016300 "Substitution Procedures" for proposal of product.

- D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.2 COMPARABLE PRODUCTS

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
1. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
 2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
 3. Evidence that proposed product provides specified warranty.
 4. List of similar installations for completed projects with project names and addresses and names and addresses of Architects and owners, if requested.
 5. Samples, if requested.

END OF SECTION 016000

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**PRODUCT REQUIREMENTS
Section 016000 - Page 6**

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SECTION 016300 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.
- B. Related Requirements:
 - 1. Section 012300 "Alternates" for products selected under an alternate.
 - 2. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.

1.3 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
 - 1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
 - 2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.

1.4 ACTION SUBMITTALS

- A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
 - 1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

- a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
- b. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors that will be necessary to accommodate proposed substitution.
- c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
- d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
- e. Samples, where applicable or requested.
- f. Certificates and qualification data, where applicable or requested.
- g. List of similar installations for completed projects with project names and addresses and names and addresses of Architects and owners.
- h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
- i. Research reports evidencing compliance with building code in effect for Project, from ICC-ES.
- j. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
- k. Cost information, including a proposal of change, if any, in the Contract Sum.
- l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
- m. 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.

1.5 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.

1.6 PROCEDURES

- A. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than fifteen (15) days prior to time required for preparation and review of related submittals.
1. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
- a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Substitution request is fully documented and properly submitted.
 - c. Requested substitution will not adversely affect Contractor's construction schedule.
 - d. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - e. Requested substitution is compatible with other portions of the Work.
 - f. Requested substitution has been coordinated with other portions of the Work.
 - g. Requested substitution provides specified warranty.
 - h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Not allowed unless otherwise indicated.

END OF SECTION 016300

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**SUBSTITUTION PROCEDURES
Section 016300 - Page 4**

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SUBSTITUTION REQUEST FORM

We hereby submit for your review & consideration the following product in lieu of the specified item for the following project: WDMCS Valley Southwoods Roofing Replacement Project.

SPECIFICATIONS:

<u>SECTION</u>	<u>TITLE</u>	<u>PARAGRAPH</u>	<u>ITEM</u>
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DRAWINGS:

<u>NUMBER</u>	<u>TITLE</u>	<u>ITEM</u>
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Proposed Substitution: _____.

Complete the attached information on changes to the Specifications and/or Drawings for the proposed substitution. Identify specific model numbers, finishes, and options. All fields must be completed in their entirety. Provide additional information for any changes required for proper install of the proposed substitution.

- A. Will changes be required to building design or drawing dimensions in order to properly install proposed substitution? Yes ___ No ___. If yes, explain.

- B. Will the undersigned pay for changes to the building design, including architectural, engineering, and other related drawing costs that are caused by the requested substitution? Yes ___ No ___.

- C. Differences between proposed substitution and specified item. _____
- D. What affect does substitution have on other trades? _____
- E. Does manufacturer's warranty of the proposed substitution differ from that specified? Yes ___ No ___. If yes, explain.

Submit, as requested, all necessary samples and backup information to prove equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance. Failure to do so will result in a returned, non-reviewed substitution request form.

Substitutions of the materials and equipment described in the Bid Documents will be considered during the bidding period only. Substitution requests shall be reviewed and approved by the Design Professional prior to the date set for receipt of bids as described in the front end of the specification.

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

Submitted by: _____.

Signature: _____ Title: _____.

Organization: _____.

Address: _____.

Telephone: _____ Email: _____ Date: _____.

Signature shall be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

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SECTION 017000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
 - 1. Construction layout.
 - 2. Field engineering and surveying.
 - 3. Installation of the Work.
 - 4. Cutting and patching.
 - 5. Progress cleaning.
 - 6. Starting and adjusting.
 - 7. Protection of installed construction.
 - 8. Correction of the Work.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for limits on use of Project site.
 - 2. Section 013100 "Submittal Procedures" for submitting surveys.
 - 3. Section 017100 "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
 - 4. Section 024119 "Selective Demolition" for demolition and removal of selected portions of the building.

1.3 DEFINITIONS

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

1.4 INFORMATIONAL SUBMITTALS

- A. Cutting and Patching Plan: Submit plan describing procedures at least ten (10) days prior to the time cutting and patching will be performed. Include the following information:
1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
 3. Products: List products to be used for patching and firms or entities that will perform patching work.
 4. Dates: Indicate when cutting and patching will be performed.
 5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
 - a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

1.5 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
 2. 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 results in increased maintenance or decreased operational life or safety.
 3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

- B. Cutting and Patching Conference: 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.
- C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities, mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.

3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 1. Description of the Work.
 2. List of detrimental conditions, including substrates.
 3. List of unacceptable installation tolerances.
 4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013000 "Project Management and Coordination."
- E. Surface and Substrate Preparation: Comply with manufacturer's written recommendations for preparation of substrates to receive subsequent work.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

3.4 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 90 inches in occupied spaces and 90 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.5 CUTTING AND PATCHING

- A. Cutting and Patching, 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 in-place 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. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.
- G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Concrete/Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
 - 5. 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.

6. Proceed with patching after construction operations requiring cutting are complete.
- H. 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 practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather tight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 OWNER-FURNISHED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based

on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials of type to be stored.
 - 4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."

- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components.
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017000

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**EXECUTION REQUIREMENTS
Section 017000 - Page 10**

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SECTION 017100 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures.
 - 2. Final completion procedures.
 - 3. Warranties.
 - 4. Final cleaning.
 - 5. Repair of the Work.
- B. Related Requirements:
 - 1. Section 017000 "Execution Requirements" for progress cleaning of Project site.
 - 2. Section 017200 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.
 - 3. Section 017300 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 ACTION SUBMITTALS

- A. Product Data: For cleaning agents.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.

- C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of (10) ten days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Label with manufacturer's name and model number where applicable.
 - 5. Submit test/adjust/balance records.
 - 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of (10) ten days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Advise Owner of pending insurance changeover requirements.
 - 2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 - 3. Complete startup and testing of systems and equipment.
 - 4. Perform preventive maintenance on equipment used prior to Substantial Completion.

5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video recordings specified in Section 018200 "Demonstration and Training."
 6. Advise Owner of changeover in heat and other utilities.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request to Architect for inspection to determine Substantial Completion a minimum of ten (10) days prior to date the work will be completed and ready for final inspection and tests. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment according to Section 012100 "Payment Procedures."
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of ten (10) days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
- B. Partial Occupancy: Submit properly executed warranties within (10) ten days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:

- a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
 - 1) Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
 - p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - q. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.
- D. Construction Waste Disposal: Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 - 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 017100

SECTION 017200 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
 - 4. Miscellaneous record submittals.
- B. Related Requirements:
 - 1. Section 017000 "Execution Requirements" for final property survey.
 - 2. Section 017100 "Closeout Procedures" for general closeout procedures.
 - 3. Section 017300 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one (1) set of marked-up record prints.
- B. Record Specifications: Submit one (1) set of marked-up Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one (1) set of each submittal.
 - 1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities.

- E. Reports: Submit written report indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
 - 1. Preparation: Mark record prints to show the actual installation 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 provide information for preparation of corresponding marked-up record prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an acceptable drawing technique.
 - c. Record data as soon as possible after obtaining it.
 - d. Record and check the markup before enclosing concealed installations.
 - e. Cross-reference record prints to corresponding archive photographic documentation.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.
 - 3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
 2. Consult Architect for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared record Drawings into record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file.
 3. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation 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. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.

5. Note related Change Orders and record Drawings where applicable.

B. Format: Submit record Specifications as annotated PDF electronic file.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as annotated PDF electronic file.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect reference during normal working hours.

END OF SECTION 017200

SECTION 017300 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Product maintenance manuals.
 - 5. Systems and equipment maintenance manuals.
- B. Related Requirements:
 - 1. Section 013100 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

- A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

- B. Format: Submit operations and maintenance manuals in the following format:
 - 1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Architect.
 - a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
 - b. Enable inserted reviewer comments on draft submittals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Architect.
7. Name and contact information for Commissioning Authority.
8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
9. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

2.3 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
2. Performance and design criteria if Contractor has delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.

10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.4 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.

3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

2.5 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
1. Standard maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
1. Test and inspection instructions.

2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training video recording, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of operation and maintenance manuals.
 2. Comply with requirements of newly prepared record Drawings in Section 017810 "Project Record Documents."
- G. Comply with Section 017100 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017300

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SECTION 017400 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Training in operation and maintenance of systems, subsystems, and equipment.

1.3 INFORMATIONAL SUBMITTALS

- A. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
- B. Attendance Record: For each training module, submit list of participants and length of instruction time.
- C. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.

1.4 QUALITY ASSURANCE

- A. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.

1.5 COORDINATION

- A. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by Owner.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- A. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections, or as applicable to the system, equipment, or component:
 - 1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria if Contractor is delegated design responsibility.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.
 - g. Limiting conditions.
 - h. Performance curves.
 - 2. Documentation: Review the following items in detail:
 - a. Emergency manuals.
 - b. Operations manuals.
 - c. Maintenance manuals.
 - d. Project record documents.
 - e. Identification systems.
 - f. Warranties and bonds.
 - g. Maintenance service agreements and similar continuing commitments.
 - 3. Emergencies: Include the following, as applicable:

- a. Instructions on meaning of warnings, trouble indications, and error messages.
 - b. Instructions on stopping.
 - c. Shutdown instructions for each type of emergency.
 - d. Operating instructions for conditions outside of normal operating limits.
 - e. Sequences for electric or electronic systems.
 - f. Special operating instructions and procedures.
4. Operations: Include the following, as applicable:
 - a. Startup procedures.
 - b. Equipment or system break-in procedures.
 - c. Routine and normal operating instructions.
 - d. Regulation and control procedures.
 - e. Control sequences.
 - f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
 - a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
 - a. Diagnostic instructions.
 - b. Test and inspection procedures.
7. Maintenance: Include the following:
 - a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.
8. Repairs: Include the following:
 - a. Diagnosis instructions.
 - b. Repair instructions.

- c. Disassembly; component removal, repair, and replacement; and reassembly instructions.
- d. Instructions for identifying parts and components.
- e. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017300 "Operation and Maintenance Data."
- B. Set up instructional equipment at instruction location.

3.2 INSTRUCTION

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
- B. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
 - 1. Owner will furnish Contractor with names and positions of participants.
- C. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
 - 1. Schedule training with Owner, with at least seven (7) days' advance notice.
- D. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
- E. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a performance-based test.
- F. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

END OF SECTION 017400

DOCUMENT 017500 – CERTIFICATE OF SUBSTANTIAL COMPLETION

CERTIFICATE NUMBER: 01
DATE OF ISSUANCE:

CONTRACT INFORMATION:

Contract For: WDMCS Valley Southwoods Replacements Project
Date: March 10th, 2026

PROJECT

WDMCS Valley Southwoods
Roofing Replacement
625 S 35th St
West Des Moines, Iowa 50265

OWNER

West Des Moines Community Schools
Attn: Tim Simpkins
3550 Mills Civic Parkway
West Des Moines, Iowa 50265

ARCHITECT

MELEE, LLC (dba: Studio MELEE)
139 4th Street
West Des Moines, Iowa 50265

CONTRACTOR

THE WORK IDENTIFIED BELOW HAS BEEN REVIEWED AND FOUND, TO THE ARCHITECT'S BEST KNOWLEDGE TO BE SUBSTANTIALLY COMPLETE. SUBSTANTIAL COMPLETION IS ATTAINED WHEN THE PROGRESS OF THE WORK IS SUFFICIENTLY COMPLETE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS SO THAT THE OWNER CAN OCCUPY OR UTILIZE THE WORK FOR ITS INTENDED PURPOSE. THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT OR PORTION DESIGNATED BELOW IS THE DATE ESTABLISHED BY THIS CERTIFICATE:

All work described in the documents for the project as prepared by Studio MELEE:

WARRANTIES:

The date of substantial completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the contract documents, except as stated below:

WORK TO BE COMPLETED OR CORRECTED:

A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within Twenty-Five (25) days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected:

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance and other items identified below shall be as follows:

Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

_____ ARCHITECT	_____ CONTRACTOR	_____ OWNER
_____ BY (SIGNATURE)	_____ BY (SIGNATURE)	_____ BY (SIGNATURE)
_____ PRINTED NAME	_____ PRINTED NAME	_____ PRINTED NAME
_____ DATE	_____ DATE	_____ DATE

END OF DOCUMENT 017500

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of selected portions of building or structure.
- B. Related Requirements:
 - 1. Section 011000 "Summary" for restrictions on the use of the premises, Owner-occupancy requirements, and phasing requirements.
 - 2. Section 017000 "Execution Requirements" for cutting and patching procedures.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner for reuse if indicated.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

1.5 PREINSTALLATION MEETINGS

- A. Pre-demolition Conference: Conduct conference at project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review structural load limitations of existing structure.
 - 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 5. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.
- D. Pre-demolition Photographs or Video: Submit before Work begins.
- E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- F. Warranties: Documentation indicated that existing warranties are still in effect after completion of selective demolition.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.
- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

1.9 FIELD CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
- B. Conditions existing at time of inspection for bidding and contract purposes will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 2. Architect has no responsibility for the discovery, presence, handling, disposal of, or exposure to, hazardous materials or toxic substances, in any form, on the project site. If unanticipated hazardous materials are encountered, do not proceed with demolition and construction. If materials suspected of containing hazardous materials are encountered, do not disturb. In either case, immediately contact and notify the owner. Stop work in the area of potential hazard. Contractor shall shut off fans and other air-handlers ventilating the area and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.
 - 3. This project shall meet all relevant federal and state regulations regarding regulated asbestos-containing building materials (ACMs), including but not limited to the following:
 - a. Notifying the EPA, DNR, and NESHAP.
 - b. Completing asbestos survey by a licensed asbestos building inspector in order to identify, classify and quantify all ACMs.
 - c. Submission of a demolition notification form to the DNR at least 10 working days prior to the start of demolition (regardless of whether ACMs were discovered).
 - d. Removal of ACMs by a permitted asbestos abatement contractor.

- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain smoke, fire sprinkler and fire-alarm facilities in service during selective demolition operations.

1.10 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties. Notify warrantor before proceeding.
- B. Notify warrantor on completion of selective demolition, and obtain documentation verifying that existing system has been inspected and warranty remains in effect. Submit documentation at Project closeout.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- D. When unanticipated mechanical, electrical, plumbing, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

- E. Survey of Existing Conditions: Record existing conditions by use of pre-construction photographs.
 - 1. Inventory and record the condition of items to be removed and salvaged. Provide photographs of conditions that might be misconstrued as damage caused by salvage operations.
 - 2. Before selective demolition or removal of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL/PLUMBING SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in Section 015000 "Temporary Facilities and Controls"
- B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical/plumbing systems serving areas to be selectively demolished.
 - 1. Coordinate with owner's schedule to shut off any services, systems and utilities.
 - 2. Arrange to shut off indicated services, systems and utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 - 4. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Comply with requirements for access and protection Section 015000 "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 - 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 - 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Section 015000 " Temporary Facilities and Controls."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
 - 1. Strengthen or add new supports when required during progress of selective demolition.
- D. Temporary Partitions: Provide substantial construction designed by the contractor to provide effective protection of existing areas to remain as required.
 - 1. Isolate demolition operations from other areas. Provide adequate temporary partitions at doors, windows, clerestory windows, skylights, and other related fenestration to protect against passage of dust and dirt into interior spaces.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
 - 1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.

2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly.

B. Removed and Salvaged Items:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area on-site or off-site.
5. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition, and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

- A. Roofing:** Remove no more existing roofing than what can be covered in one day by new roofing and so that building interior remains watertight and weathertight. See Section 070150 for preparation for re-roofing. See Sections 061000, 072200, 075323,

076200, 077200, and 079200 for new blocking, insulation, roofing, flashing, roof accessory, and sealant requirements.

1. Remove existing roof membrane, flashings, copings, and roof accessories as indicated on plans.
2. Remove existing roofing system down to substrate, down to structural roof deck, or as required for work as indicated on plans.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 1. Do not allow demolished materials to accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
 3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.
- B. Burning: Do not burn demolished materials.
- C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.7 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Wood blocking and nailers.

1.3 DEFINITIONS

- A. Exposed Framing: Framing not concealed by other construction.
- B. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- C. Lumber grading agencies, and the abbreviations used to reference them, include the following:
 - 1. NeLMA: Northeastern Lumber Manufacturers' Association.
 - 2. NLGA: National Lumber Grades Authority.
 - 3. RIS: Redwood Inspection Service.
 - 4. SPIB: The Southern Pine Inspection Bureau.
 - 5. WCLIB: West Coast Lumber Inspection Bureau.
 - 6. WWPA: Western Wood Products Association.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - 1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.

2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

1.5 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.
- B. Evaluation Reports: For the following, from ICC-ES:
 1. Wood-preservative-treated wood.
 2. Power-driven fasteners.
 3. Powder-actuated fasteners.
 4. Expansion anchors.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
 1. Factory mark each piece of lumber with grade stamp of grading agency.
 2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 3. Provide dressed lumber, S4S, unless otherwise indicated.
- B. Maximum Moisture Content of Lumber: 15 percent unless otherwise indicated.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

- A. Preservative Treatment by Pressure Process: AWP U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.
- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.
- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood blocking, stripping, and similar concealed members in contact with masonry or concrete.
 - 3. Wood framing members that are less than 18 inches above the ground.
- E. Do not treat lumber at locations where vapor barriers, insulation, cover board, roof membranes, or other roofing materials are shown (or required by the manufacturer) to be stuck, laminated, and/or adhered to the lumber. If the lumber is oversaturated or the moisture content of the wood is too high, it may prevent the roofing materials from bonding properly during installation.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
 - 1. Blocking.
 - 2. Nailers.
 - 3. Rooftop equipment bases and support curbs.
- B. For items of dimension lumber size, provide Construction or No. 2 grade lumber and any of the following species:
 - 1. Hem-fir (north); NLGA.
 - 2. Mixed southern pine; SPIB.
 - 3. Spruce-pine-fir; NLGA.
 - 4. Hem-fir; WCLIB or WWPA.
 - 5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

- C. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:
 - 1. Mixed southern pine; No. 2 grade; SPIB.
 - 2. Hem-fir or hem-fir (north); Construction or No. 2 Common grade; NLGA, WCLIB, or WWPA.
 - 3. Spruce-pine-fir (south) or spruce-pine-fir; Construction or No. 2 Common grade; NeLMA, NLGA, WCLIB, or WWPA.
- D. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- E. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

2.5 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch.
- B. Adhesives for Gluing Wood to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.
- C. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chlorpyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.
- B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
- C. Provide blocking and framing as indicated and as required to support other work.
- D. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- E. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
 - 1. Use inorganic boron for items that are continuously protected from liquid water.
 - 2. Use copper naphthenate for items not continuously protected from liquid water.
- F. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
 - 3. Table R602.3(1), "Fastener Schedule for Structural Members," and Table R602.3(2), "Alternate Attachments," in ICC's International Residential Code for One- and Two-Family Dwellings.

- G. Use hot-dipped galvanized steel nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood. Drive nails snug but do not countersink nail heads unless otherwise indicated.

3.2 WOOD GROUND, BLOCKING, AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.
- C. Where wood-preserved-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- D. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 PROTECTION

- A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.
- B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Exterior gypsum board for ceilings and soffits.
 - 2. Sheathing joint and penetration treatment.
 - 3. Texture finishes.
- B. Related Requirements:
 - 1. Section 079200 "Joint Sealants" for sealants in joint and penetration treatment.
 - 2. Section 099123 "Painting".

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
- B. Samples: For the following products:
 - 1. Trim Accessories: Full-size sample in 12-inch long length for each trim accessory indicated.
 - 2. Textured Finishes: Manufacturer's Standard size for each textured finish indicated and on same backing indicated for work.

1.4 QUALITY ASSURANCE

- A. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Install mockups for the following:
 - a. Each level of gypsum board finish indicated for use in exposed locations.
 - b. Each texture finish indicated.
2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
3. Simulate finished lighting conditions for review of mockups.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.6 FIELD CONDITIONS

- A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.
- B. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.
 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or blotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 SOFFIT SHEATHING

- A. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.
 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. CertainTeed Corporation; GlasRoc.
 - b. G-P Gypsum Corporation; Dens-Glass Gold.

- c. National Gypsum Company; Gold Bond e(2)XP.
- d. United States Gypsum Co.; Securock.

- 2. Nominal Thickness: 5/8 inch

2.2 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.
 - 1. For wall sheathing, provide fasteners of Type 304 stainless steel.
- B. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.
 - 1. For steel framing less than 0.0329 inch thick, use screws that comply with ASTM C 1002.
 - 2. For steel framing from 0.033 to 0.112 inch thick, use screws that comply with ASTM C 954.

2.3 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS

- A. Sealant for Glass-Mat Gypsum Sheathing: Silicone emulsion sealant complying with ASTM C 834, compatible with sheathing tape and sheathing and recommended by tape and sheathing manufacturers for use with glass-fiber sheathing tape and for covering exposed fasteners.
 - 1. Sheathing Tape: Self-adhering glass-fiber tape, minimum 2 inches wide, 10 by 10 or 10 by 20 threads/inch, of type recommended by sheathing and tape manufacturers for use with silicone emulsion sealant in sealing joints in glass-mat gypsum sheathing and with a history of successful in-service use.
 - 2. After sheathing joint treatment, apply setting type joint compound over joints and fasteners. Provide skim coat as required to achieve uniform texture-ready surface. Prime with exterior high-build primer and apply exterior finish system.

2.4 EXTERIOR TRIM: ASTM C 1047

- 1. Material: Hot-dip galvanized steel sheet. G-90 Minimum.
- 2. Shapes:
 - a. Cornerbead.
 - b. LC-Bead: J-shaped; exposed long flange receives joint compound.
 - c. Expansion (Control) Joint: One-piece, rolled zinc with V-shaped slot and removable strip covering slot opening.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.
- B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
- C. Securely attach to substrate by fastening, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. "Fastening Schedule," in ICC's "International Building Code."
- D. Coordinate wall sheathing installation with flashing, joint-sealant, and fluid-applied weather barrier installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
- E. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 APPLYING EXTERIOR GYPSUM PANELS FOR CEILINGS AND SOFFITS

- A. Apply panels perpendicular to supports, with end joints staggered and located over supports.
 - 1. Install with 1/4-inch (6.4-mm) open space where panels abut other construction or structural penetrations.
 - 2. Fasten with corrosion-resistant screws.
- B. Seal sheathing joints according to sheathing manufacturer's written instructions.
 - 1. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel silicone emulsion sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

3.3 INSTALLING TRIM ACCESSORIES

- A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

- B. Control Joints: Install control joints at locations indicated on Drawings according to ASTM C 840 and in specific locations approved by Architect for visual effect.
- C. Exterior Trim: Install in the following locations:
 - 1. LC-Bead: Use at wall and backside of fascia conditions.

3.4 FINISHING GYPSUM BOARD

- A. Use exterior setting-type compounds only.
- B. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.
- C. Prefill open joints and damaged surface areas.
- D. See "Gypsum Board Finish Levels" Article in the Evaluations for a discussion of requirements of various levels.
- E. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.

3.5 APPLYING TEXTURE FINISHES

- A. Use exterior setting-type compounds only.
- B. Surface Preparation and Primer: Prepare and apply primer to gypsum panels and other surfaces receiving texture finishes. Apply primer to surfaces that are clean, dry, and smooth.
- C. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.
- D. Prevent texture finishes from coming into contact with surfaces not indicated to receive texture finish by covering them with masking agents, polyethylene film, or other means. If, despite these precautions, texture finishes contact these surfaces, immediately remove droppings and overspray to prevent damage according to texture-finish manufacturer's written recommendations.

3.6 PROTECTION

- A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

- B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.
- C. Remove and replace panels that are wet, moisture damaged, and mold damaged.
 - 1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
 - 2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION 061600

SECTION 070150 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Partial roof tear-off.
 - 2. Temporary roofing membrane.
 - 3. Roof re-cover preparation.
 - 4. Removal of base flashings.
- B. Related Sections:
 - 1. Section 011000 "Summary" for use of the premises and phasing requirements.
 - 2. Section 015000 "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.
 - 3. Section 075323 "EPDM Roofing" for new membrane.

1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.4 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Membrane Roofing System: Rock ballast, EPDM roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.

- C. Partial Roof Tear-Off: Removal of a portion of existing membrane roofing system from deck or removal of selected components and accessories from existing membrane roofing system.
- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 ACTION SUBMITTALS

- A. Submit under provisions of Section 013100.
- B. All submittals shall be subject to the Owner's review and approval.
- C. Product Data: For each type of product indicated.
- D. Temporary Roofing (If proposed): Include Product Data and description of temporary roofing system. If temporary roof will remain in place, submit surface preparation requirements needed to receive permanent roof, and submit a letter from roofing membrane manufacturer stating acceptance of the temporary membrane and that its inclusion will not adversely affect the roofing system's resistance to fire and wind or its FM Global rating.

1.6 INFORMATIONAL SUBMITTALS

- A. Submit under provisions of Section 013100.
- B. All submittals shall be subject to the Owner's review and approval.
- C. Qualification Data: For Installer
- D. Fastener test report.
- E. Photographs or Video: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of new membrane roofing system.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Reroofing Conference: Conduct conference at Project site

1. Meet with Construction Manager, Owner; Architect; Owner's insurer; testing and inspecting agency representative; roofing system manufacturer's representative; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
 - a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
 - b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
 - c. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging and plug removal requirements.
 - d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - e. Existing damaged insulation identification and removal procedures and Owner notifications.
 - f. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
 - g. Structural loading limitations of deck during reroofing.
 - h. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.
 - i. HVAC shutdown and sealing of air intakes.
 - j. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
 - k. Governing regulations and requirements for insurance and certificates if applicable.
 - l. Existing conditions that may require notification of Architect before proceeding.

1.8 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours' notice of activities that may affect Owner's operations.
1. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area.
 2. Before working over structurally impaired areas of deck, notify Owner to evacuate occupants from below the affected area. Verify that occupants below the work area have been evacuated before proceeding with work over the impaired deck area.

- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Conditions existing at time of inspection for bidding and contract will be maintained by Owner as far as practical.
 - 1. Construction Drawings and Project Manual for existing roofing system are available for Contractor's reference. Contractor is responsible for conclusions derived from existing documents.
- E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.
- F. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 - 1. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
 - 2. Architect has no responsibility for the discovery, presence, handling, disposal of, or exposure to, hazardous materials or toxic substances, in any form, on the project site. If unanticipated hazardous materials are encountered, do not proceed with demolition and construction. If materials suspected of containing hazardous materials are encountered, do not disturb. In either case, immediately contact and notify the owner. Stop work in the area of potential hazard. Contractor shall shut off fans and other air-handlers ventilating the area and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.
 - 3. This project shall meet all relevant federal and state regulations regarding regulated asbestos-containing building materials (ACMs), including but not limited to the following:
 - a. Notifying the EPA, DNR, and NESHAP.
 - b. Completing asbestos survey by a licensed asbestos building inspector in order to identify, classify and quantify all ACMs.
 - c. Submission of a demolition notification form to the DNR at least 10 working days prior to the start of demolition (regardless of whether ACMs were discovered).
 - d. Removal of ACMs by a permitted asbestos abatement contractor.

1.9 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair any adjacent materials and surfaces cut or damaged during reroofing, by methods and with materials so as not to void existing system warranties. Notify warrantor before proceeding.

PART 2 - PRODUCTS

2.1 INFILL MATERIALS

- A. Use infill materials matching existing membrane roofing system materials unless otherwise indicated.

2.2 TEMPORARY ROOFING MATERIALS

- A. Design and selection of materials for temporary roofing are responsibilities of Contractor if proposed.

2.3 AUXILIARY REROOFING MATERIALS

- A. General: Auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new membrane roofing system.
- B. Base Sheet Fasteners: Capped head, factory-coated steel fasteners, listed in FM Approval's "Approval Guide."
- C. Metal Flashing Sheet: Metal flashing sheet is specified in Section 076200 "Sheet Metal Flashing and Trim."

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect existing membrane roofing system that is indicated not to be reroofed.
 - 1. Loosely lay 1-inch- minimum thick, molded expanded polystyrene (MEPS) insulation over the roofing membrane in areas indicated. Loosely lay 15/32-inch plywood or OSB panels over MEPS. Extend MEPS past edges of plywood or OSB panels a minimum of 4 inches.
 - 2. Limit traffic and material storage to areas of existing roofing membrane that have been protected.
 - 3. Maintain temporary protection and leave in place until replacement roofing has been completed. Remove temporary protection on completion of reroofing.
- B. Coordinate with Owner to shut down air-intake equipment in the vicinity of the Work. Cover air-intake louvers before proceeding with reroofing work that could affect indoor air quality or activate smoke detectors in the ductwork.
- C. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

- D. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove debris and roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
- E. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 ROOF TEAR-OFF

- A. General: Notify Construction Manager and Owner each day of extent of roof tear-off proposed for that day.
- B. Remove loose aggregate from aggregate-surfaced built-up bituminous roofing using a power broom.
- C. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the structural roof deck.
 - 1. Remove cover boards, roof insulation, and substrate boards.
 - 2. Bitumen and felts that are firmly bonded to concrete decks are permitted to remain if felts are dry. Remove unadhered bitumen and felts and wet felts.
 - 3. Remove all excess asphalt from structural roof deck. Prep deck per manufacturers requirements for installation of self-adhesive vapor barrier.
 - 4. Remove fasteners from deck.

3.3 DECK PREPERATION

- A. Inspect deck after tear-off of membrane roofing system.
- B. Verify that deck is sound and there is no water damage or rot present. If deck appears or feels inadequately attached or fasteners are missing or rusted, immediately notify Architect. Do not proceed with installation until directed by Architect.
- C. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- D. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

3.4 INFILL MATERIALS INSTALLATION

- A. Immediately after removal of selected portions of existing membrane roofing system, and inspection and repair, if needed, of deck, fill in the tear-off areas to match existing membrane roofing system construction.
 - 1. Installation of infill materials is specified in Section 075323 "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing."
 - 2. Install new roofing membrane patch over roof infill area. If new roofing membrane is installed the same day tear-off is made, roofing membrane patch is not required.

3.5 ROOF RE-COVER PREPARATION

- A. Remove irregularities that inhibit new insulation and cover boards from conforming to substrate.
 - 1. Clean substrate of contaminants such as dirt, debris, oil, and grease that can affect installation of new cover board or roofing membrane.
 - 2. Coordinate with Owner and Architect to schedule times for tests and inspections before proceeding with installation of insulation and cover boards.
 - 3. Verify that existing substrate is dry before proceeding with installation of insulation and cover boards.
 - 4. If any substrate materials are wet and damp, immediately notify Owner and Architect.

3.6 TEMPORARY ROOFING MEMBRANE

- A. Install approved temporary roofing membrane over area to be reroofed if required.
- B. Remove temporary roofing membrane before installing new roofing membrane.
- C. Prepare the temporary roof to receive new roofing membrane by patching and repairing temporary roofing membrane. Restore temporary roofing membrane to watertight condition. Obtain approval for temporary roof substrate from roofing membrane manufacturer and Architect before installing new roof.

3.7 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations as indicated on the drawings.
 - 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

- B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish.
- C. Inspect parapet sheathing for deterioration and damage. If parapet sheathing has deteriorated, immediately notify Construction Manager or Architect.

3.8 FASTENER PULL-OUT TESTING

- A. Retain independent testing and inspecting agency to conduct fastener tests according to SPRI FX-1, and submit test report to Construction Manager, Architect, and roofing membrane manufacturer before installing new membrane roofing system.
 - 1. Obtain roofing membrane manufacturer's approval to proceed with specified fastening pattern. Roofing membrane manufacturer may furnish revised fastening pattern commensurate with test results.

3.9 COVER BOARD INSTALLATION

- A. Install cover boards over roof insulation with long joints in continuous straight lines and end joints staggered between rows. Loosely butt cover boards together and fasten to deck.
 - 1. Tape joints of recover boards if required by roofing membrane manufacturer.
- B. Fasten recover boards to resist wind-uplift pressure at corners, perimeter, and field of roof as required by roofing membrane manufacturer for a thirty (30) year warranted assembly, no-dollar limit material and workmanship effective from date of final acceptance by the owner.
 - 1. Install adhesive ribbons at 4" o.c. throughout or install full coverage (full spray) adhesive over entire surface of each board.

3.10 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.
- C. Pick up all material debris from the roof and site at the end of each day.
- D. Remove all debris and clean existing roof deck prior to reinstalling new materials.

END OF SECTION 070150

SECTION 072200 – ROOF DECK INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

A. Section Includes:

- 1. Rigid Board Insulation
- 2. Spray Foam Insulation
- 3. Fasteners and Plates
- 4. Foam Adhesive
- 5. Vapor Barrier
- 6. Cover Board

B. References:

- 1. ASTM C165 Test Method for Measuring Compressive Properties of Thermal Insulation
- 2. ASTM C208 Specification for Insulating Board (Cellulosic Fiber), Structural and Decorative
- 3. ASTM C209 Methods of Testing Insulating Board (Cellulosic Fiber), Structural and Decorative
- 4. ASTM C272 Test Method for Water Absorption of Core Materials for Structural Sandwich Constructions
- 5. ASTM C473 Test Methods for Physical Testing of Gypsum Board Products and Gypsum Lath

6. ASTM C518 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
7. ASTM C578-971a Specification for Preformed, Cellular Polystyrene Thermal Insulation
8. ASTM C728 Specification for Perlite Thermal Insulation Board
9. ASTM C1177 Specification for Glass Matt Gypsum Substrate for use as Sheathing
10. ASTM C1289 Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
11. ASTM D41 Specification for Asphalt Primer Used in Roofing and Waterproofing
12. ASTM D1621 Test Method for Compressive Properties of Rigid Cellular Plastics
13. ASTM D1622 Test Method for Apparent Density of Rigid Cellular Plastics
14. ASTM D2126 Test Method for Response of Rigid Cellular Plastics to Thermal and Humid Aging
15. ASTM D4601 Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing
16. ASTM E96 Test Methods for Water Vapor Transmission of Materials
17. FM Factory Mutual Engineering Corporation -
18. Data Sheet 1-28 Insulated Steel Deck

1.3 SYSTEM DESCRIPTION

A. UL Class "A" Rating

1. It is the intent of this specification to provide a roof system with a UL Class "A" Rating. The descriptions given below are general descriptions. The insulation, recovery board, and other components shall be as required by the membrane manufacturer to obtain a UL Class "A" Rating.

B. Roof Drains

1. Provide starting thickness, tapered slope, and sumps at all roof drains, as shown on the Drawings. Insulation shall at all roof drains shall be secured to the roof deck.

C. The work of this project is identified as follows:

1. Install vapor barrier at locations shown on the Drawings.
2. Install base layer insulation, including all saddles and crickets at thicknesses and locations shown on the Drawings.
 - a. Metal Deck Roof Substrate:
 - 1) Mechanically attach to metal deck at a rate sufficient to meet the requirements of FM1-90 but not less than sixteen (16) fasteners and plates per 4'x8' insulation board. See Drawings for additional fasteners.
 - 2) Locations: See drawings.
 - b. Tectum Deck Roof Substrate:
 - 1) Mechanically attach to metal deck at a rate sufficient to meet the requirements of FM1-90 but not less than sixteen (16) fasteners and plates per 4'x8' insulation board. See Drawings for additional fasteners.
 - 2) Locations: See drawings.
3. Install top layers of insulation fully adhered in a layer of low-rise foam adhesive to the base layer of insulation at a rate sufficient to meet the requirements of FM1-90. See Drawings for bead spacings.
 - a. Insulation joints shall be staggered a minimum of 1 ft-0in. in all layers. Install tapered polyisocyanurate saddles/crickets in a layer of foam adhesive as noted on Roof Plan.
4. Install cover board, fully adhered in a layer of low-rise foam adhesive to the top layers of insulation at a rate sufficient to meet the requirements of FM1-90. See Drawings for bead spacings.
 - a. Cover board joints shall be staggered a minimum of 1 ft-0in. in all layers.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013100 "Submittal Procedures."
- B. All submittals shall be subject to the Owner's review and approval.
- C. Manufacturer's Product Data:
 1. Most recent copy of manufacturer's literature applicable to products and specifications to be used, including material characteristics, test data, installation recommendations, material safety data sheets (MSDS).
- D. Manufacturer's Installation Instructions:
 1. Most recent copy of manufacturer's installation instructions for applications detailing products and specifications to be used.
- E. Shop Drawings

1. Submit manufacturer's shop drawings for tapered insulation systems. Shop drawings shall show board-by-board layout pattern of the tapered system and shall comply with the drainage pattern as indicated on the plans.
 - a. The responsibility of providing shop drawings for the tapered insulation system lies solely with the manufacturer of the tapered insulation system. Shop drawings by others will not be accepted.
 - b. Shop drawings shall include: Outline of roof, location of drains, scuppers, or gutters, complete board layout of tapered insulation components, thicknesses, and the average "R" value for the completed insulation system.
 - c. The roofing contractor shall verify all roof dimensions and drain locations and confirm same with the manufacturer prior for fabrication of tapered insulation.
2. Submit layout pattern for mechanical fasteners.

F. Samples:

1. Submit samples listed below:
 - a. Sample of each type of vapor barrier.
 - b. Sample of each type of insulation.
 - c. Sample of each type of mechanical fastener and plate.
 - d. Sample of each type of cover board.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store all insulation materials in a manner to protect them from the wind, sun, and moisture damage prior to and during installation. Any insulation that has been exposed to any moisture shall be removed from the project site.
- B. Keep materials enclosed in a watertight, yet ventilated enclosure (i.e., tarpaulins).
- C. Store materials off of the ground. Any warped or broken insulation boards shall be removed from the site.
- D. Insulation packages shall be labeled to include manufacturer, material name, and production date.

1.6 TESTING

- A. Contractor shall have the manufacturer or an independent party acceptable to the manufacturer and Engineer/Architect conduct resistance test on concrete decks to receive insulation as specified herein.
- B. Tests shall be conducted in accordance with the requirements of the vapor barrier manufacturer, insulation manufacturer, and fastener manufacturer, cover board manufacturer, and membrane manufacturer.
- C. The party conducting the tests shall generate a report outlining the results of the tests. The reports shall be provided to the manufacturer, contractor, and Engineer/Architect.
- D. The party conducting the test shall notify Engineer/Architect in writing of any test that does not meet the manufacturers requirements.

PART 2 - PRODUCTS

2.1 APPROVED EQUAL

- A. The Contractor must submit any specific product not specified below per the directions laid out in Section 016300 "Substitution Procedures."

2.2 VAPOR BARRIER

- A. Mechanically Fastened Insulation
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. V-Force Vapor Barrier Membrane by Elevate
 - 1) V-Force solvent-based primer.

2.3 INSULATION MATERIALS

- A. Polyisocyanurate
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ISO 95+ GL Insulation by Elevate
 - 2. Insulation board shall meet the following requirements:
 - a. UL listed under Roof Systems
 - 3. Physical Properties

PROPERTY	TEST METHOD	SPECIFICATIONS
DIMENSIONAL STABILITY	ASTM D2126	2% MAX
COMPRESSIVE STRENGTH	ASTM D1621	20 PSI MIN
WATER ABSORPTION	ASTM C209	1% MAX
VAPOR PERMEABILITY	ASTM E96	1 PERM MAX
FOAM CORE DENSITY	ASTM D1622	2.0 PCF MIN
R-FACTOR HR (SQ. FT. PER DEGREE FAHRENHEIT PER BTU) PER INCH THICKNESS	ASTM C518	5.9 MIN

2.4 MECHANICAL FASTENERS FOR INSULATION MATERIALS

A. Mechanical Fasteners and Plates for Metal Deck

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Construction Fasteners
- b. ITW Buildex
- c. The Tru-Fast Corporation
- d. The Rawlplug Company, Inc.
- e. Olympic Fasteners
- f. Approved Equivalent

2. Requirements

- a. Plates shall be three inches in diameter minimum and composed of galvanized steel.
- b. Fastener and plates shall meet requirements of FM Standard 4470, passing the SRIU Corrosion Test Procedures - Kesternich DIN-50018 with 15% red rust allowable.
- c. Fastener and plate shall be approved within applicable FM tested roof system.

B. Wood Components

1. Use Factory Mutual approved fasteners and fastening pattern to install wood blocking and nailers.

2.5 ADHESIVE FOAM

A. Adhered Insulation.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. I.S.O. Stick Insulation Adhesive by Elevate

2.6 COVER BOARD

A. Polyisocyanurate

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ISOGARD HD Cover Board by Elevate

PART 3 - EXECUTION

3.1 INSPECTION OF SURFACES

- A. Examine surfaces for adequate anchorage, foreign materials, moisture and other conditions which would adversely affect the roofing application and performance.
- B. The roofing contractor shall be responsible for preparing an adequate substrate to receive insulation.

3.2 INSTALLATION

A. Vapor Barrier

1. Apply primer to deck surfaces at a rate required by manufacturer.
2. Apply vapor barrier as required by the manufacturer.

B. Roof Insulation (General Requirements)

1. Insulation shall be laid in parallel courses with all joints staggered between courses.
2. Insulation shall be neatly fitted to all roof penetrations, projections and nailers with no gaps greater than 1/4-inch.
3. Tapered insulation sump shall be installed around roof drains. Install tapered insulation sump in such a way to provide proper slope for runoff. Shape insulation with tool as required to provide a smooth surface.
 - a. Under no circumstances will the membrane be left unsupported in an area greater than one-fourth inch (1/4"). Install recovery board over tapered insulation sump as required.

4. When more than one layer of insulation is used, joints shall be staggered a minimum of 1 ft.-0 in. apart where possible with relation to the layer beneath, and each layer shall be fully attached to the roof deck in accordance with these specifications.
5. No more insulation shall be placed on the surface to receive roof membrane than can be covered with roofing membrane before the end of the day's work or before the onset of inclement weather.
6. Discard all damaged or broken insulation boards. Insulation shall be dry when installed and protected from weather during application. All materials which become wet or warped shall be removed from the site and replaced with new dry materials.
7. Provide insulation saddles at all curbs.
8. The practice of "glazing-in" insulation as a temporary roof is considered phased construction, and will not be accepted.
9. Cut tapered insulation for final adjustments where insulation is thinnest. Dress down mismatches in surface greater than one-eighth inch (1/8").

C. Attachment With Mechanical Fasteners

1. Approved insulation board shall be fully attached to the deck with an approved mechanical fastening system. At a minimum, the amount of fasteners shall be in accordance with manufacturer's recommendation for FM1-90 approved system. Otherwise, a minimum of one fastener per two square feet shall be installed.
2. Filler pieces of insulation require at least two fasteners if size of insulation is less than four square feet.
3. If insulation facer is damaged in application and/or under foot or cart traffic, refer to insulation manufacturer's recommendations for patching facer, or replace damaged insulation boards with new.
4. Spacing pattern of fasteners shall be as per manufacturer's recommendations to meet the FM requirements. Placement of any fastener from edge of insulation board shall be a minimum of three inches, and a maximum of six inches.
5. Minimum penetration into deck shall be as recommended by the fastener manufacturer. There is an one-inch (1") minimum for metal, wood, and structural concrete decks where not specified by the manufacturer. For concrete decks, penetration shall be determined from test results with a minimum penetration of one and one-half inches (1-1/2"). Contractor shall only use the required length of fastener needed to secure insulation into the top of the flutes.

D. Attachment with Adhesive

1. Attachment of insulation to substrate with adhesive shall be as recommended by the insulation manufacturer. Size of insulation board shall be 4' x 4' maximum. (4x8 sheets, cut down to 4x4, will not be allowed.)
2. Embed roof insulation boards in adhesive. Lay in parallel courses. Butt each panel to adjoining panels. Carefully walk in each piece of insulation and continue to walk in and test for adhesion until adhesive has set and provided complete securement. Boards which can be lifted up without breaking are inadequately adhered and shall be reset in fresh moppings.
3. If insulation facer is damaged in application and/or under foot or cart traffic, refer to insulation manufacturer's recommendations for patching facer, or replace damaged insulation boards with new.
4. Required adhesion will not be achieved unless the insulation contacts the adhesive before it sets. Contact is best achieved by passing the loaded insulation cart over the row of insulation as it is being laid, taking insulation from the cart. Sufficient "walking in" will also result from the installer stepping on each square foot of surface before the adhesive sets, but the common practice of shoving each board in and kicking it in one place will not achieve acceptable adhesion. Adhesion will not occur at a later date but must be achieved as laid.
5. Cutting and fitting and trying around irregularities or protrusions shall be done before adhering insulation to the substrate.

END OF SECTION 072200

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SECTION 074113 - METAL ROOF PANELS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Furnish and install standing-seam metal roof panel system, including:
 - 1. Roofing manufacturer's requirements for the specified warranty.
 - 2. Preparation of roofing substrates.
 - 3. Wood nailers for roofing and soffit attachment.
 - 4. Self-adhering underlayment.
 - 5. Metal roof edging and copings.
 - 6. Metal flashings and trims.
 - 7. Metal roof snow guards.
 - 8. Other roofing-related items specified or indicated on the drawings or otherwise necessary to provide a complete roofing system.
- B. Related Sections:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Section 070150 "Preparation for Re-Roofing".
 - 3. Section 076200 "Sheet Metal Flashings and Trim" for exposed trim, fascias, metal counter-flashings, eaves, and gutters.
 - 4. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
- C. Disposal of demolition debris and construction waste is the responsibility of Contractor. Perform disposal in manner complying with all applicable federal, state, and local regulations.
- D. Comply with the published recommendations and instructions of the metal roof panel system manufacturer.
- E. Commencement of work by the Contractor shall constitute acknowledgement by the Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by metal roof panel system manufacturer. No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.

1.3 DEFINITIONS

- A. Metal Roof Panel System: Metal roof panels, attachment system components, miscellaneous metal framing, thermal insulation, and accessories necessary for a complete weathertight roofing system.

1.4 REFERENCES

- A. Referenced Standards: These standards form part of this specification only to the extent they are referenced as specification requirements.
- B. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; American Society of Civil Engineers; 2011.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2011.
- D. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing; 2008.
- E. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2013.
- F. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2013.
- G. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2013a.
- H. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings; American Society for Testing and Materials; 2011.
- I. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2012.
- J. ASTM E1592 - Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference; American Society for Testing and Materials; 2005 (Reapproved 2012)
- K. ASTM E1646 - Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference; American Society for Testing and Materials; 1995 (Reapproved 2011).
- L. ASTM E1680 - Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems; American Society for Testing and Materials; 2011.
- M. MBMA - Metal Roofing Systems Design Manual; Metal Building Manufacturers Association; 2012.
- N. PS 1 - Construction and Industrial Plywood; 2009.
- O. PS 20 - American Softwood Lumber Standard; 2010.
- P. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
- Q. UL 2218 - Standard for Impact Resistance of Prepared Roof Covering Materials; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.

1.5 PERFORMANCE REQUIREMENTS

- A. General Performance: Sheet metal roof panel system including, but not limited to, metal roof panels, cleats, clips, anchors and fasteners, sheet metal flashing integral

with sheet metal roofing, fascia panels, trim, battens, underlayment, and accessories shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.

- B. Water Penetration: No water penetration when tested according to ASTM E 1646 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 2.86 lbf/sq. ft.
- C. Wind-Uplift Resistance: Provide metal roof panel system assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 - 1. Uplift Rating: UL 90.
- D. Structural Performance: Provide metal roof panel system assemblies capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated, based on testing according to ASTM E 1592:
 - 1. Wind Loads: Determine loads based on the following minimum design wind pressures:
 - a. Uniform pressure of 30 lbf/sq. ft., acting inward or outward.
 - b. Uniform pressure as indicated on Drawings.
 - 2. Snow Loads:
 - a. 30 lbf/sq. ft. (ground)
 - b. 30 lbf/sq. ft. + drift (roof)
 - 3. Deflection Limits: Metal roof panel system assemblies shall withstand wind and snow loads with vertical deflections no greater than L/240 of the span.
- E. Thermal Movements: Metal roof panel system shall allow for thermal movements resulting from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.6 SUBMITTALS

- A. Submit under provisions of Section 013100 "Submittal Procedures."
- B. All submittals shall be subject to the Owner's review and approval.
- C. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of roof panel and accessory.

1. Installation Instructions: Provide manufacturer's instructions to installer, marked up to show exactly how all components will be installed; where instructions allow installation options, clearly indicate which option will be used.
- D. Shop Drawings: Show fabrication and installation layouts of metal roof panels; details of edge conditions, side-seam and endlap joints, panel profiles, corners, anchorages, trim, flashings, closures, insulation, underlayment, and accessories; and special details. Distinguish between factory- and field-assembled work. Specifically include interfaces with materials not supplied by metal roof panel manufacturer and identify each component and its finish.
 1. Accessories: Include details of the following items, at a scale of not less than 1-1/2 inches per 12 inches:
 - a. Flashing and trim.
 - b. Gutters.
 - c. Downspouts.
 - d. Roof curbs.
 - e. Snow guards.
 - f. Roof attachment clips.
 - g. Color chips.
 - h. Underlayments.
- E. Samples for Initial Selection: For each type of metal roof panel indicated with factory-applied color finishes.
 1. Include similar Samples of trim and accessories involving color selection.
- F. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
 1. Metal Roof Panels: 12 inches long by actual panel width. Include fasteners, clips, battens, closures, and other metal roof panel accessories.
 2. Trim and Closures: 12 inches long. Include fasteners and other exposed accessories.
 3. Snow Guards: Full-sized sample.
 4. Accessories: 12-inch- long Samples for each type of accessory.
- G. Pre-Installation Notice: Copy to show that manufacturer's required Pre-Installation Notice (PIN) has been accepted and approved by the manufacturer.

1.7 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Roof plans, drawn to scale, on which the following are shown and coordinated with each other, based on input from installers of the items involved:
 1. Roof panels and attachments.
 2. Edge framing. Wood block & nailers.
 3. Roof-mounted items including penetrations, lighting fixtures, and snow guards.

- B. Qualification Data: For qualified Installer.
- C. Material Certificates: For vapor retarders, from manufacturer.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each product.
- E. Field quality-control reports.
- F. Warranties: Samples of special warranties.

1.8 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For metal roof panels to include in maintenance manuals.

1.9 QUALITY ASSURANCE

- A. Installer Qualifications: An employer of workers trained and approved by metal roof panel system manufacturer.
 - 1. Current Elevate Red Shield licensed installer status.
 - 2. Having and using only equipment authorized and inspected by metal panel manufacturer.
- B. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.
- C. Source Limitations: Obtain each type of metal roof panels from single source from single metal roof panel system manufacturer.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.
 - 1. Build mockup of typical roof eave, including fascia, as shown on Drawings; approximately four panels wide by full eave width, including underlayment, attachments, and accessories.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Pre-Installation Conference: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.
 - 1. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work.
 - 2. Notify Architect well in advance of meeting.

3. Review methods and procedures related to metal roof panel installation, including metal roof panel system manufacturer's written instructions.
4. Examine deck and sheathing substrate conditions for compliance with requirements, including flatness and attachment to structural members.
5. Review flashings, special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect metal roof panels.
6. Review temporary protection requirements for metal roof panel assembly during and after installation.
7. Review roof observation and repair procedures after metal roof panel installation.
8. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, metal roof panels, and other manufactured items so as not to be damaged or deformed. Package metal roof panels for protection during transportation and handling.
- B. Unload, store, and erect metal roof panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal roof panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal roof panels to ensure dryness. Do not store metal roof panels in contact with other materials that might cause staining, denting, or other surface damage.
- D. Protect strippable protective covering on metal roof panels from exposure to sunlight and high humidity, except to extent necessary for period of metal roof panel installation.

1.11 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed according to metal roof panel system manufacturer's written instructions and warranty requirements.
- B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

1.12 COORDINATION

- A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

- B. Coordinate metal roof panels with rain drainage work, flashing, trim, and construction of decks/sheathing and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.13 WARRANTY

- A. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
- B. Manufacturer's warranty is in addition to, and not a limitation of, other rights the owner may have under the contract documents.
- C. Special Warranty: Manufacturer's standard form in which metal roof panel system manufacturer agrees to repair or replace metal roof panel system assemblies that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures including rupturing, cracking, or puncturing.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: 5-year, from date of Substantial Completion.
- D. Special Warranty on Panel Finishes: Manufacturer's standard form in which metal roof panel system manufacturer agrees to repair finish or replace metal roof panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 30-year, No Dollar Limitation (NDL), from date of Substantial Completion.
- E. Special Weathertightness Warranty for Standing-Seam Metal Roof Panel System: Manufacturer's standard form in which metal roof panel system manufacturer agrees to repair or replace standing-seam metal roof panel system assemblies that fail to remain weathertight, including leaks, within specified warranty period.
 - 1. Wind Warranty: Winds up to 90 mph.
 - 2. Warranty Period: 30-years, No Dollar Limitation (NDL), from date of Substantial Completion.

- F. Manufacturer Inspection and Preventive Maintenance Requirement: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections and preventive maintenance is included in the Contract Sum. Inspections to occur in Years 2, 5, 10 and 15 following completion.

PART 2 - PRODUCTS

2.1 METAL ROOF PANEL SYSTEM DESCRIPTION

- A. Metal Roof Panel System: Standing seam metal roof panels and other components, together forming a watertight system assembly having the following characteristics:
1. Warranty: 30-year, No Dollar Limit (NDL).
 2. Panel Seams: Self-locking, concealed anchor clip attachment to substrate.
 3. Color: Matte Black.
 4. Design Loads: In accordance with ASCE 7, current edition.
 - a. Design Snow Load: Not less than 30 psf.
 - b. Maximum Deflection Under Snow Load: Not more than L/180 or as recommended by ASCE 7, whichever is less.
 - c. Wind Uplift Resistance: Class 90 rating, minimum, when tested in accordance with UL 580.
 - d. Wind Pull-Off Resistance: No failure of roof panel or fasteners when tested in accordance with ASTM E1592 for negative loading equal to negative design wind load; for assemblies not tested, capacity for gauge, span, or loading may be determined by interpolating between test values only.
 5. Impact Resistance: Minimum of Class 4, when tested in accordance with UL 2218.
 6. Thermal Effects: Design roof panels and their attachment to allow free movement in response to expansion and contraction forces resulting from temperature variation, as specified in the MBMA Metal Roofing Systems Design Manual.
 7. External Fire Resistance: Class A when tested in accordance with ASTM E108 or UL 790.
 8. Provide all necessary members and connections, whether indicated in the metal roof panel system manufacturer's standard detail drawings or not.
 9. Accessories and Their Fasteners: Capable of resisting the specified design wind uplift forces and allowing for thermal movement of the roof panel system, not restricting free movement of the roof panel system resulting from thermal forces except at designed points of roof panel fixity.
- B. Metal Roof Panel System Components: In order from the top down:
1. Metal roofing panels and trim.
 2. Underlayment: Self-adhering, high temperature underlayment over entire roof; material as specified or recommended by metal roof panel system manufacturer for achieving warranty.

3. Bearing plates: As required.
4. Cover Board: OSB; minimum 5/8-inch (nominal) 19/32-inch (actual) thick.

2.2 ROOF PANELS AND SHEET METAL FABRICATIONS

- A. Roof Panels: Basis-of-design: Elevate UNA-CLAD UC-6 Standing Seam Metal Roof Panel System; roll formed roofing panels produced in a permanent factory environment with fixed-base roll-forming equipment.
1. Seam Type: Double-Lock.
 2. Seam Height: 2 inches.
 3. Seam Spacing (Panel Width): 18 inches.
 4. Panel Material: Steel, 22 gauge with fluoropolymer finish, over G90 hot-dipped galvanized coating.
 5. Profile: Flat Ribs.
 6. Texture: Smooth.
 7. Provide factory applied integral seam sealant in seam cap.
 8. Concealed clips as tested and supplied by metal roof panel system manufacturer.
 9. Form roofing panels in longest practical lengths, true to shape, accurate in size, square, and free from distribution or manufacturing defects.
- B. Steel Sheet: ASTM A653/A653M, lock-forming quality, extra smooth, tension-leveled, galvanized/galvannealed steel, minimum spangle.
- C. Fluoropolymer Coating: 70 percent full strength Kynar 500/Hylar 5000.
1. Exposed Surface: 1.0 mil plus/minus 0.1 mil total dry film thickness.
 2. Concealed Surface: 0.2 to 0.3 mils total dry film thickness.
 3. Color: To be selected from metal roof panel system manufacturer's standard and premium colors.
- D. Sheet Metal Components Associated with Metal Roof Panels: Made by same manufacturer and compatible with roof panels; of not less than minimum thickness required by metal roof panel system manufacturer.
1. Fabricate trim, flashing, and accessories to metal roof panel system manufacturer's specified or approved profiles.
 2. Exposed metal components of same finish as panels.
 3. Provide the following formed sheet metal components as required:
 - a. Eave.
 - b. Solid & Vented Ridge.
 - c. Hip.
 - d. Fascia cover & splice plates.
 - e. Closure & trim plates.
 - f. Copings.
 - g. Solid & Vented High eave.
 - h. Solid & Vented Headwall flashing.
 - i. Valleys

- j. Rake edge.
- k. Vertical fascia.
- l. Side wall flashing.
- m. Pipe and other penetration flashings, for penetrations over 8 inches.
- n. Flashings at interface to other roofing types.
- o. Other flashings & trims.
- p. Gutters, conductor head boxes & down spouts.

2.3 ACCESSORY MATERIALS

- A. Self-Adhered Underlayment: Basis-of-design: Elevate Clad-Gard SA; Rubberized sheet waterproof membrane complying with ASTM D 1970/D1970M, self-adhering.
 - 1. Thickness: 40-mil.
 - 2. Resistance to Direct Exposure: At least 90 days.
 - 3. Minimum High Temperature Resistance: 230 degrees F.
 - 4. Water Vapor Permeance: 0.1 perm, maximum.
- B. Fasteners: In strict accordance with metal roof panel system manufacturer's requirements; minimize exposed fasteners.
 - 1. Fasteners Exposed to Weather: Sealed or with sealed washers on exterior side of covering to waterproof fastener penetration; washer material compatible with screw head; minimum 3/8-inch diameter washer for structural connections; gasket portion of fasteners or washers made of EPDM, neoprene, or other equally durable elastomeric material.
 - 2. Fasteners Exposed to View: Head of color matching panel or component in which installed.
- C. Installation Clips: Manufacturer standard galvanized or stainless-steel clips, as required by panel selection, for concealed securement of panels. Use only those approved for use by the metal roof panel system manufacturer.
- D. Flashing and Trim: Formed from same material as roof panels, prepainted with coil coating, minimum 0.018 inch thick. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal roof panels.
- E. Gutters: Formed from same material roof panels. Match profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 96-inch-long sections of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Furnish gutter supports spaced a maximum of 36 inches o.c., fabricated from same metal as gutters. Provide wire ball strainers of compatible metal at outlets. Finish gutters to match metal roof panels, roof fascia, and rake trims.
- F. Downspouts: Formed from same material as roof panels. Fabricate in 10-foot-long sections, complete with formed elbows and offsets, of size and metal thickness

according to SMACNA's "Architectural Sheet Metal Manual". Finish downspouts to match gutters.

- G. Roof Curbs: Fabricated from same material as roof panels, minimum 0.048 inch thick; with bottom of skirt profiled to match roof panel profiles and welded top box and integral full-length cricket. Fabricate curb subframing of minimum 0.0598-inch-thick, angle-, C-, or Z-shaped steel sheet. Fabricate curb and subframing to withstand indicated loads, of size and height indicated. Finish roof curbs to match metal roof panels.

2.4 SNOW GUARDS

- A. Snow Guards: Prefabricated, noncorrosive units designed to be affixed to panel seams of metal roof panels, and complete with set screws, clamps, or hooks for anchoring.
 - 1. Rib-Mounted, Metal, Stop-Type Snow Guards: Cast-aluminum stops designed for attachment to metal roof panel using non-penetrating warranted attachment.
 - 2. Basis-of-Design: SG-1, Una-Clad Continuous Snow Retention System. Compatible with metal roof panel system manufacturer.

2.5 FABRICATION

- A. Fabricate and finish metal roof panels and accessories at the factory to greatest extent possible, by metal roof panel system manufacturer's standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.
- B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.
- C. Fabricate metal roof panel side laps with factory-installed captive gaskets or separator strips that provide a tight seal and prevent metal-to-metal contact, in a manner that will seal weathertight and minimize noise from movements within panel assembly.
- D. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.
 - 1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 - 2. End Seams for Other Than Aluminum: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
 - 3. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
5. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA's "Architectural Sheet Metal Manual" or by metal roof panel system manufacturer for application, but not less than thickness of metal being secured.

2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 GENERAL.

- A. Install roofing, insulation, flashings, and accessories in accordance with metal roof panel system manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
- B. Inspection of the roofing shall be made by a responsible representative of the metal roof panel system manufacturer during application and after completion. Reference Section 014000 - Quality Requirements.
- C. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
- D. Verify that shop drawings prepared by metal roof panel system manufacturer have been approved and are available to installers; do not use drawings prepared by others for installation drawings.
- E. Verify that the specifications and drawing details are workable and not in conflict with the metal roof panel system manufacturer's recommendations and instructions; start of work constitutes acceptance of project conditions and requirements.
- F. Do not start work until Pre-Installation Notice has been submitted to metal roof panel system manufacturer as notification that this project requires a manufacturer's warranty.

- G. Perform work using competent and properly equipped personnel.
- H. Temporary closures, which ensure that moisture does not damage any completed section of the new metal roof panel system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
- I. Install roofing only when surfaces are clean, dry, smooth, and free of snow or ice; do not apply roofing during inclement weather or when ambient conditions will not allow proper application; consult metal roof panel system manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F.
- J. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
 - 1. Protect from spills and overspray from bitumen, adhesives, sealants, and coatings.
 - 2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
 - 3. Protect finished areas of the metal roof panel system from roofing related work traffic and traffic by other trades.
- K. Until ready for use, keep materials in their original containers as labeled by the metal roof panel system manufacturer.
- L. Consult metal roof panel system manufacturer's instructions, container labels, and Safety Data Sheets (SDS) for specific safety instructions. Keep all adhesives, sealants, primers, and cleaning materials away from all sources of ignition.

3.2 EXAMINATION

- A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment, and that deflection will not strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Verify that the substructure installation is in accordance with the approved shop drawings and metal roof panel system manufacturer's requirements, that the fasteners are correct for the substrate, and the substrate is installed to accommodate and support the appropriate clip spacing and attachment.
- D. Verify that installed work of other trades that such work is complete to a point where the roofing system installation may commence.
- E. Verify that roof openings, curbs, pipes, sleeves, ducts, vents, and other penetrations through roof substrate are complete and properly located.

- F. In event of discrepancy, notify Architect in writing; do not proceed with installation until discrepancies have been resolved.

3.3 UNDERLAYMENT INSTALLATION

- A. Install underlayment in accordance with metal roof panel system manufacturer's instructions.
- B. Install self-adhered underlayment over entire roofing surface. Lap surfaces as specified or as recommended by metal roof panel system manufacturer.

3.4 ROOF PANEL INSTALLATION

- A. Install the metal roof panel system in accordance with the metal roof panel system manufacturer's instructions, installation drawings, and approved shop drawings, so that it is weathertight and allows for thermal movement.
- B. Locate space and fasten all clips in accordance with metal roof panel system manufacturer's recommendations. For required fasteners, use proper torque settings to obtain controlled uniform compression for a positive seal without rupturing the sealing washers.
- C. Do not place utility penetrations through the panel seams.
- D. Do not allow panels or trim to come into contact with dissimilar materials (i.e. copper, lead, graphite, treated lumber, mortar, etc). Protect from water run-off from these materials.
- E. Perform field cutting of panels and related sheet metal components by means of hand or electric shears. At no time shall a hot/friction saw be used.
- F. Remove protective film immediately after installation.

3.5 METAL FASCIA INSTALLATION

- A. Metal Fascia Panels: Align bottom of panels and fasten with blind rivets, bolts, or self-tapping screws. Flash and seal panels with weather closures where fasciae meet soffits, along lower panel edges, and at perimeter of all openings.

3.6 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by metal roof panel system manufacturer's recommendations and details.
- B. Install metal trim, accessories, and edgings in locations indicated on the drawings.
 - 1. Follow roofing metal roof panel system manufacturer's instructions.
 - 2. Remove protective plastic surface film immediately before installation.

- C. Flashing at Walls and Other Vertical and Sloped Surfaces: Install weathertight flashing at all vertical and sloped surfaces that the roofing system abuts to; extend flashing at least 8 inches high above system surface.
- D. Flashing at Penetrations: Flash all penetrations passing through the panel; make flashing seals directly to the penetration.
 - 1. Pipes, Round Supports, and Similar Items: Flash with specified pre-molded pipe flashings wherever practical.
 - 2. Where pre-molded pipe flashings are not practical, provide flashing detail as recommended by metal roof panel system manufacturer.
- E. Gutters: Join sections with riveted and soldered or lapped and sealed joints. Attach gutters to eave with gutter hangers spaced not more than 36 inches o.c. using manufacturer's standard fasteners. Provide end closures and seal watertight with sealant. Provide for thermal expansion.
- F. Downspouts: Join sections with telescoping joints. Provide fasteners designed to hold downspouts securely 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c. in between.
 - 1. Provide elbows at base of downspouts to direct water away from building.
 - 2. Connect downspouts to underground drainage system indicated.
- G. Roof Curbs: Install curbs at locations indicated on Drawings. Install flashing around bases where they meet metal roof panels.
- H. Pipe Flashing: Form flashing around pipe penetration and metal roof panels. Fasten and seal to metal roof panels as recommended by roof panel system manufacturer.

3.7 SNOW GUARD INSTALLATION

- A. Stop-Type Snow Guards: Attach snow guards to metal roof panels with sealant and gasketed fastener or as recommended by metal roof panel system manufacturer.
- B. Provide one row of snow guards, beginning 12 inches up from eave, with each snow guard centered between panel ribs.

3.8 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing agency to perform inspections.
- B. Inspection by Manufacturer: Provide final inspection of the metal roof panel system by a Technical Representative employed by metal roof panel system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).
- C. Repair or remove and replace components of metal roof panel system where inspections indicate that they do not comply with specified requirements.

- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.9 ADJUSTING AND CLEANING

- A. Repair panels having minor damage.
- B. Remove panels damaged beyond repair and replace with new panels to match adjacent undamaged panels.
- C. Clean exposed panel surfaces promptly after installation in accordance with recommendations of panel and coating manufacturers.
- D. Clean all contaminants generated by roofing work from building and surrounding areas, including adhesives, sealants, and coatings.
- E. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- F. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.10 PROTECTION

- A. Where construction traffic must continue over finished roof panels, provide durable protection, and replace or repair damaged roofing to original condition

END OF SECTION 074113

SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Adhered EPDM membrane roofing system.
 - 2. Membrane flashings
 - 3. Other accessories
 - 4. Warranty
- B. Related Sections:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Section 072200 "Roof Deck Insulation" for vapor barrier, insulation above the roof deck, and cover board beneath new membrane roofing.
 - 3. Section 076200 "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counter flashings.
 - 4. Section 077200 "Roof Accessories" for roof curbs, equipment supports, roof hatches, safety rails, and pipe supports.
 - 5. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 REFERENCES

- A. ASTM D41 Specification for Asphalt Primer used in Roofing and Waterproofing.
- B. ASTM D312 Specification for Asphalt used in Roofing.
- C. ASTM D412 Test Methods for Rubber Properties in Tension.
- D. ASTM D471 Test Method for Rubber Property - Effect of Liquids.
- E. ASTM D573 Test Method for Rubber - Deterioration in an Air Oven.
- F. ASTM D624 Test Method for Rubber Property - Tear Resistance.

- G. ASTM D746 Test Method for Brittleness Temperature of Plastics and Elastomers by Impact.
- H. ASTM D816 Methods of Testing Rubber Cements.
- I. ASTM D1149 Test Method for Rubber Deterioration - Surface Ozone Cracking in a Chamber (Flat Specimens).
- J. ASTM D1204 Test Method for Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature.
- K. ANSI/UL 790 Tests for Fire Resistance of Roof Covering Materials.
- L. FM Factory Mutual Loss Prevention Data-Perimeter Flashing.
- M. NRCA NRCA Roofing and Waterproofing Manual.

1.4 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.5 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.
- D. FM Approvals Listing: Provide membrane roofing, base flashings, and component materials that comply with requirements in FM Approvals 4450 and FM Approvals 4470 as part of a membrane roofing system, and that are listed in FM Approvals' "RoofNav" for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals' markings.

1.6 SUBMITTALS

- A. Submit under provisions of Section 013100 "Submittal Procedures."

- B. All submittals shall be subject to the Owner's review and approval.
- C. Manufacturer's Product Data:
 - 1. Most recent copy of manufacturer's literature applicable to products and specifications to be used, including material characteristics, test data, installation recommendations, material safety data sheet (MSDS), and complete flashing details of system. MSDS sheets shall be submitted directly to the Owner.
 - 2. Specimen copy of manufacturer's warranty.
 - 3. Manufacturer's Installation Instructions:
 - a. Most recent copy of manufacturer's installation instructions for applicators detailing products and specifications to be used, including procedures for installation of membrane and flashing.
 - 4. Manufacturer's Certificates:
 - a. Copy of completed contractor's application form for manufacturer's warranty to be submitted to the Architect/Engineer at the same time as original is submitted to the membrane manufacturer.
 - b. Copy of the contractor-submitted manufacturer's warranty form approved by the manufacturer. Note: The Contractor will not be permitted to start work until the approved warranty form is submitted to the Architect/Engineer.
 - 5. Shop Drawings:
 - a. Roof Plan and Details: By submittal of a bid for this project, the contractor certifies that the project plans and specifications have been reviewed, and that the proposed roof system will be installed in accordance with these plans and specifications. If, after award of contract and upon review of existing field conditions, the contractor wishes to modify the roof plans and/or details, the proposed change shall be submitted as a shop drawing for review by the Architect/Engineer.
 - b. Roof Insulation: Reference Section 072200 – "Roof Deck Insulation" for requirements.
 - c. Sheet Metal Fabrication: Reference Section 076200 – "Sheet Metal Flashing and Trim" for requirements.
 - d. Roof Accessories: Reference Section 077200 – "Roof Accessories" for requirements.
 - 6. Samples:
 - a. Provide samples listed below, if specifically requested by the Architect/Engineer.
 - 1) EPDM membrane.

- 2) Flashing membrane.
 - 3) Membrane fastening strip.
 - 4) Mechanical fastener and plate.
 - 5) Fastening bar/strip.
 - 6) Other membranes specified.
7. Manufacturer's Field Services and Reports:
- a. Reference Section 014000 – “Quality Requirements.”

1.2 QUALITY ASSURANCE

- A. Applicator shall be certified by manufacturer to install specified products.
- B. The entire installation of roofing, insulation, flashing and sheet metal work shall be of the quality required for acceptance by the membrane manufacturer to obtain the warranty specified in this section.
- C. Comply with the requirements of the regulatory agencies as specified herein.
- D. As an approved applicator, all items required by the membrane manufacturer in the installation of the manufacturer's system will be included in the work.
- E. The roofing contractor shall assure that all roofing materials (i.e., membrane, insulation, fasteners, asphalt, adhesives, sealants, etc.) are compatible with each other and the substrates which they will be in contact with.

1.3 QUALIFICATIONS

- A. Applicator:
 1. Company specializing in performing the work of this section with a minimum of seven (7) years documented experience.
 2. Company certified by the membrane manufacturer for a minimum of five (5) years as an approved applicator of the products specified in this section.
 3. Company having workmen trained by the membrane manufacturer. These trained workmen shall perform the work.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store materials under provisions of Section 016000 – “Product Requirements.”
- B. Deliver materials in sufficient quantity to allow continuity of work.
- C. Coordinate delivery of materials with Owner so that minimal interruption of Owner's operations occurs.
- D. Materials shall be stored in their original, tightly sealed containers or unopened packages, and shall be clearly labeled with the manufacturer's brand name and

such identifying reference numbers as are appropriate. Deliver materials to job site on pallets. Do not stack pallets.

- E. Materials shall be stored in a neat, safe manner, so as not to exceed allowable live load of the storage area. Contractor shall not load pallets of material onto the roof deck without approval from the Architect/Engineer prior to loading. Disperse materials on roof deck to avoid concentrated loading.
- F. Store materials in dry, protected areas in an upright position. Control temperature of storage areas in accordance with manufacturer's instructions. Protect materials from freezing.
- G. Follow manufacturer's guidelines for required temperatures of material prior to application.
- H. Any materials damaged in handling or storage are not to be used.
- I. The Contractor shall assume full responsibility for the protection and safekeeping of materials stored on Owner's premises.
- J. Store roll goods on ends only. Discard rolls which have been flattened, creased, or otherwise damaged.
- K. Remove wet material from project site.
- L. Comply with fire and safety regulations.
- M. Splice cleaner and bonding adhesives are extremely flammable. Do not use near fire or flame or in unventilated areas. Dispense from UL approved containers and consult material safety data sheets for specific information.
- N. Do not allow EPDM membrane to come into direct contact with steam or steam source.
- O. Installation may continue in cold weather provided adhesives and sealants are stored at room temperature prior to application and used within a 4-hour period after being brought to the roof if approved by the manufacturer.

1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.8 WARRANTY

- A. Provide to the Owner the Membrane manufacturers thirty (30) year warranted assembly, no-dollar limit material and workmanship warranty effective from the date of final acceptance by the owner.

- B. The Contractor shall provide to the Owner a notarized written warranty assuring that all roofing work, including caulking, flashing, and sheet metal to be watertight for a period of FIVE (5) years from the date of final acceptance of the work. Warranty shall include all materials and workmanship required to repair any leaks that develop as a result of the work. Refer to sample provided at the end of this Section.
- C. Extended Roof System Warranty: Warranties specified in this Section include the following components and systems specified in other sections supplied by the roofing system Manufacturer, and installed by the roofing system Installer:
1. Sheet metal flashing and trim, including roof penetration flashings.
 2. Manufactured copings, roof edge, counter flashings, and reglets.
 3. Roof curbs, hatches, and penetration flashings.
 4. Roof and parapet expansion joint assemblies.
 5. Hail Damage.
- D. Manufacturer Inspection and Preventive Maintenance Requirement: By manufacturer's technical representative, to report maintenance responsibilities to Owner necessary for preservation of Owner's warranty rights. The cost of manufacturer's inspections and preventive maintenance is included in the Contract Sum. Inspections to occur in Years 2, 5, 10 and 15 following completion.

PART 2 - PRODUCTS

2.1 APPROVED EQUAL

- A. The Contractor must submit any specific product not specified below per the directions laid out in Section 016300 "Substitution Procedures."

2.2 EPDM MEMBRANE ROOFING

- A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.
1. Basis-of-Design Product: Subject to compliance with requirements, provide:
 - a. RubberGard Platinum EPDM Membrane by Elevate
 - b. Low Slope Fire Retardant (LSFR) RubberGard EPDM
 2. Thickness: 90 mils nominal
 3. Exposed Face Color: Black
 4. Physical Properties:

<u>PHYSICAL PROPERTY</u>	<u>TEST METHOD</u>	<u>SPECIFICATION</u>
THICKNESS, MIN., INCHES (MM)	ASTM D412	0.090 (1.524) +/- 10%
TENSILE STRENGTH, MIN., PSI (MPA)	ASTM D412 DIE C	1305 (9.0)
ELONGATION, ULTIMATE, MIN., %	ASTM D412	300
TENSILE SET, MAX. 50% ELONGATION	ASTM D412	10

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TEAR RESISTANCE, MIN. LB./IN. (N/MM)	ASTMD624 DIE C	150 (26.27)
BRITTLENESS POINT, MAX., F (C)	ASTM D746	-49 (-45)
LINEAR DIMENSIONAL CHANGE, MAX. %	ASTM D1204	+/- 2
OZONE RESISTANCE	ASTM D1149	NO CRACKS
HEAT AGING, MIN., PSI (MPA)	ASTM D573	1205 (8.3)
WATER ABSORPTION, MAX. MASS. %	ASTM D471	+8 TO -2
FACTORY SEAM STRENGTH	ASTM D816	SHEET FAILURE OR 50 LB./IN. MIN.

- B. Sheet Flashing: 60-mil- thick EPDM, partially cured or cured, according to application.
- C. Protection Sheet: Epichlorohydrin or neoprene non-reinforced flexible sheet, 55- to 60-mil- thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil.
- D. Bonding Adhesive:
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide:
BA-2004(T) by Elevate
- E. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 3-inch- wide minimum, butyl splice tape with release film.
- F. Lap Sealant: Manufacturer's standard, single-component sealant, colored to match membrane roofing.
- G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- H. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.
- I. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to roofing system manufacturer.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.3 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface-textured walkway pads, approximately 3/16 inch thick, manufactured by the membrane roofing system manufacturer.

1. Size: 30 by 30 inches. Manufacture pavers to dimensional tolerances of plus or minus 1/16 inch in length, height, and thickness.

PART 3 - EXECUTION

3.1 PRE-INSTALLATION CONFERENCE

- A. Prior to the start of roofing work, a meeting will be held at the job site for the purpose of reviewing materials, methods and procedures to facilitate proper and timely construction of the roofing system. Reference Section 013000 – “Project Management and Coordination” for requirements.

3.2 REFERENCE

- A. The current product specification guide published by the membrane manufacturer shall be considered part of this specification and shall be referred to for more specific application procedures regarding roofing insulation, membrane and base flashing. When a difference between this specification and the manufacturer's product specification guide is encountered, the provision which is most stringent shall govern.

3.3 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
 1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 3. Verify that surface plane flatness and fastening of steel roof deck is adequate to result in positive drainage upon completion of roofing.
- B. Examine surfaces for adequate anchorage, foreign materials, moisture, and other conditions which would adversely affect the roofing application and performance.
- C. The roofing contractor shall be responsible for preparing adequate surfaces to receive insulation, roofing, and flashing.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.4 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.5 APPLICATION - GENERAL

- A. Install in accordance with the accepted roofing manufacturer's written specifications and recommended details now on file in the Architect/Engineer's office.
- B. Protect building wall area with tarpaulins or other durable materials at staging and kettle areas.
- C. Roof surfaces shall be thoroughly dry before application of roofing.
- D. Inspection of the roofing shall be made by a responsible representative of the roofing manufacturer during application and after completion. Reference Section 014000 – "Quality Requirements."
- E. Roofing insulation shall be dry when installed and shall be protected from the weather during installation. All materials which become wet shall be removed and replaced with new dry materials.
- F. Membrane shall be installed over membrane manufacturer approved insulation. Install recovery board as required by the membrane manufacturer although details on the plans may not show it.
- G. When application of roofing is begun, the total roofing system in that area shall be completed before the end of the day and before being wet by the elements.
- H. Install temporary water cutoffs at the completion of each day's work and remove upon resumption of the work. Any leaks and damage due to insufficient water cutoffs shall be repaired by the Contractor at no cost to the Owner.
- I. Precautions shall be taken to protect the membrane from puncture.
 - A. If materials are stored on the roof, the materials will be protected from the existing roof.
 - B. Special care will be taken to prevent distress on the building structure when handling materials for the project.

3.6 SEQUENCING/SCHEDULING

- A. Notify the Owner and Architect/Engineer 48 hours before the first day of construction.
- B. Install all base flashing and/or fascia system fasteners and metal work, at least throughout the anticipated working area, as soon as possible after roofing application.
- C. Complete all specified carpentry and wood component installations, at least throughout the anticipated working area, as soon as possible after any roofing application.

3.7 MEMBRANE INSTALLATION

- A. Fully adhere the EPDM membrane to the acceptable substrate with bonding adhesive at the rate specified by the manufacturer.
- B. Membrane manufacturer's seam tape must be used to splice adjacent membrane sheets. Overlap adjacent EPDM membrane sheets a minimum of 6 inches and fold back top membrane as required to receive the seam tape.
 - 1. Clean the splice area with splice cleaner. Apply primer at the rate specified by the manufacturer. Apply seam tape so that a minimum of 1/8 inch, but no more than 1/2 inch of tape, is protruding from the finished seam. Install cover pieces as required at all T- joints and overlaps. (Pre-taped membrane will not be allowed.)

3.8 ADDITIONAL MEMBRANE SECUREMENT

- A. The EPDM membrane must be secured at the perimeter of each roof level, roof section, expansion joint, curb, skylight, interior wall, penthouse, etc., at any angle change which exceeds 2 inches in one horizontal foot, and at other penetrations in accordance with details published with manufacturer's specifications. The additional membrane securement may be provided by reinforced securement strip, seam fastening plates, or batten strip.

3.9 MEMBRANE FLASHING

- A. When feasible, flash all penetrations and walls with cured EPDM membrane. Uncured EPDM flashing shall be limited to overlay vertical seams (as required on angle changes) or flash inside and outside corners, scuppers, pourable sealer pockets and other penetrations or unusually shaped walls where the use of cured membrane flashing is not practical. Manufacturer's prefabricated accessories (Premolded Pipe Boots and Pressure-Sensitive Products such as Pourable Sealer Pockets, Pipe Boots, flashing and Inside-Outside Corners) should be used, when feasible, in lieu of uncured EPDM Flashing. Terminate the flashing in accordance with an appropriate manufacturer's Termination Detail.
- B. Install flashing in accordance with the details shown on the plans or with the manufacturer's published standards whichever is more stringent.

- C. All perimeter flashings shall conform to Factory Mutual (FM) Loss Prevention Data Sheet 1-49.
- D. Curb and parapet flashings shall be fastened at top at 6" o.c. with 1" diameter cap nails.
- E. All flashing materials shall be 100% bonded to walls, curbs, edges, and other surfaces being flashed.
- F. All raised flashings shall be a minimum of eight (8) inches above the surface of the finished roof surface.
- G. All raised flashings shall have a counterflashing.

3.10 ROOF DRAINS

- A. These specifications apply for installation of cast iron drains only. For all other drain types follow membrane manufacturer's recommendations.
 - 1. Roofing contractor shall be responsible for modifying existing drain assemblies for new roof installation, including, but not limited to, lowering drain assembly, modifying leaders, etc. so that there is positive drainage of water around drain.
 - 2. Remove all existing flashing (including lead flashings), roofing materials and cement from the existing drain in preparation for membrane and water cut-off mastic.
 - 3. Provide a clean even finish on the mating surfaces between the clamping ring and the drain bowl.
 - 4. Provide tapered insulation sump at all drains (reference Section 072200 "Roof Deck Insulation"). Taper insulation around the drain to provide a smooth transition from the roof surface to the drain. Slope shall not exceed 4" per foot. Drain sump shall be lower than adjoining area.
 - 5. Position the membrane, then cut a hole for the roof drain. Allow a 1" minimum inside the clamping ring.
 - 6. Make round holes in the EPDM membrane to align with clamping bolts. Do not cut the membrane back to the bolt holes.
 - 7. Place water cut-off mastic on the clamping ring seat flange below the membrane.
 - 8. Install the roof drain clamping ring and clamping bolts. Tighten the clamping bolts to achieve constant and uniform compression. Replace any damaged, broken, or missing clamping rings or bolts with new to match existing drain design. New bolts shall be brass or stainless steel. Drill and tap broken drain bolts as required for installation of replacement bolts.

9. Replace any damaged, broken, or missing drain grates with new. New grates shall be metal.
10. Seams in membranes shall be kept 18" away from drains.
11. Seal between the membrane and the drain base shall be watertight.
12. Roof drains are to be checked and made operational at the conclusion of the roof construction activities.

3.11 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive/splicing cement according to roofing system manufacturer's written instructions.

3.12 OTHER RELATED WORK

- A. Walkways are required at all traffic concentration points (i.e., roof hatches, access doors, rooftop ladders, etc.), regardless of traffic frequency. Walkways are also required if regular maintenance (once a month or more) is necessary to service rooftop equipment.
- B. Roof pavers, splash blocks, piping saddles, and other loose laid items shall be installed in conjunction with a slip sheet of cured EPDM membrane.
- C. Copings, counterflashings and other metal work shall be fastened to prevent the metal from pulling free of buckling and sealed to prevent moisture from entering the roofing system or building.

3.13 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified independent testing agency to perform inspections.
- B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
- C. Repair or remove and replace components of membrane roofing system where inspections indicate that they do not comply with specified requirements.
- D. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.14 PROTECTING AND CLEANING

A. Water cut-offs:

1. Water cutoffs shall be installed to prevent water from flowing beneath the roof system during inclement weather.
2. The roof membrane shall be extended at least two feet over the last row of insulation (where applicable) and a continuous layer of sealant applied onto the substrate a minimum of 10 inches from the membrane edge. Mating surfaces must be smooth, clean and free of any loose foreign material.
3. Firmly embed roof membrane into sealant and provide continuous pressure over the length of the cutoff by using sufficient ballast.
4. Where applicable, use asphaltic bitumen and strip off roof membrane for tie off. When the existing roof is not being removed, gravel surfacing shall be spudded completely off the felts a minimum of six feet for the cutoff seal.

B. Temporary Walkways, Runways and Platforms.

1. Do not permit storing, walking, wheeling, or trucking directly on applied materials.
2. Provide temporary walkways, runways, and platforms of smooth clean board or planks as necessary to avoid damage to applied roofing materials, and to distribute weight to conform to indicated live load limits of roof construction.
3. Use rubber-tired equipment for roofing work.

1. Damaged Work.

- a. Restore work damaged during construction to original condition or replace with new materials.

C. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

D. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

E. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075323

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SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
2. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

1. Section Includes:
 1. Exposed Trim and Fascia
 2. Copings
 3. Metal Counter-flashings
 4. Equipment curb flashing
 5. Expansion cap flashing
 6. Ridge cap, starter strip, side/headwall, and drip flashings
 7. Termination bars
2. Related Sections:
 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
 2. Section 075323 "Ethelene-Propylene-Diene-Monomer (EPDM) Roofing."
3. References:
 1. ASTM A446-91 Specification for Steel Sheet, Zinc Coated (Galvanized) by Hot Dip Process.
 2. ASTM B209-92 Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 3. FM (Factory Mutual) Loss Prevention Data Sheet 1 - 49.
 4. FS QQ-L-201 Specification for Lead Sheet.
 5. SMACNA Architectural Sheet Metal Manual.

1.3 SYSTEM DESCRIPTION

1. Pre-finished galvanized steel at all locations noted in drawings.

1.4 PERFORMANCE REQUIREMENTS

1. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
2. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.
 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.5 ACTION SUBMITTALS

1. Submit under provisions of Section 013100 "Submittal Procedures."
2. All submittals shall be subject to the Owner's review and approval.
3. Manufacturers Product Data:
 1. Metal material characteristics and installation recommendations.
 2. Color chart for pre-finished metal. Submit color charts and color matches prior to material ordering and/or fabrication.
4. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:
 1. Identification of material, thickness, weight, and finish for each item and location in Project.
 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 4. Details of termination points and assemblies, including fixed points.
 5. Details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction.
 6. Details of edge conditions, including eaves, ridges, valleys, rakes, crickets, and counter flashings as applicable.
 7. Details of special conditions.
 8. Details of connections to adjoining work.
 9. Detail formed flashing and trim at a scale of not less than 3 inches per 12 inches.
5. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection.

1.6 INFORMATIONAL SUBMITTALS

1. Qualification Data: For qualified fabricator.
2. Warranty: Sample of special warranty.

1.7 CLOSEOUT SUBMITTALS

1. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.

1.8 QUALITY ASSURANCE

1. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
2. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.
3. Factory Mutual Loss Prevention Data Sheet 1-49, Windstorm Resistance, 1-90 minimum
4. Pre-installation Conference: Conduct conference at project site.
 1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
 2. Review methods and procedures related to sheet metal flashing and trim.
 3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
 4. Review special roof details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect sheet metal flashing.
 5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.9 DELIVERY, STORAGE, AND HANDLING

1. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
2. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.10 WARRANTY

1. Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 1. Pre-finished metal material shall require a written twenty (20) year non-prorated warranty covering fade, chalking and film integrity. The material shall not show a color change greater than 5 NBS color units per ASTM D2244, or chalking excess of 8 units per ASTM D659. If either occurs, material shall be replaced per warranty at no cost to the Owner.
 2. The Contractor shall provide the Owner with a notarized written warranty assuring all sheet metal work, including caulking and fasteners, to be water-tight and secure for a period of five (5) years from the date of final acceptance of the building. Warranty shall include all materials and workmanship required to repair any leaks that develop, and make good any damage to other work or equipment caused by such leaks or the repairs thereof. Refer to the sample warranty at the end of the roof membrane section.

PART 2 - PRODUCTS

2.1 APPROVED EQUIVALENT

1. The Contractor must submit any specific product not specified below per the directions laid out in Section 016300 "Substitution Procedures."

2.2 METAL FLASHING

1. Pre-finished Galvanized Steel
 1. Basis-of-Design Product: Subject to compliance with requirements, provide:
Una-Edge by Elevate
 2. Materials used to fabricate items including, but not limited to, scuppers, exposed trim, gravel stop, fascia, copings, counterflashings, and curb flashings shall have the following characteristics:
 - a. Material shall be 24 gauge (minimum) hot-dipped galvanized steel (AISI G90), primed and finished one side with 70% Kynar 500 resin based fluoropolymer coating
 - b. 1.0 ± 0.1 mil dry film thickness.
 - c. A wash coat of 0.3 - 0.4 mil dry film thickness shall be applied to the reverse side.
 - d. The pre-painted finished side shall be coated with a factory installed strippable film for protection of the finished surface during shipping, fabrication, and installation. Plastic film must be removed immediately after installation.

- e. Color: "Matte Black" (intent is to match existing and convert areas of Green to Matte Black).
 - 1) Manufacturer is required to match the color of the existing fascia, parapet, coping cap, flat seam metal panel, and/or other existing adjacent sheet metal colors. No additional cost from the Owner will be provided for achieving an accurate color match.
- f. Thickness shall be 24 gauge (minimum) and shall increase in thickness as recommended by metal manufacturer as face height increases.

2.3 FASTENERS

- 1. Stainless steel screws with EPDM washers of appropriate length and gauge, as recommended by metal manufacturer.
- 2. Material fasteners shall match that of metal which it secures (i.e. for aluminum - aluminum fasteners, etc.)
- 3. Fastening shall conform to Factory Mutual I-90 requirements or as stated on section details, whichever is more stringent.

2.4 SHEET METAL GRAVEL STOPS AND FASCIA

- 1. Material as shown in Drawings.
- 2. Accessories: Joint covers, corners, supports, strip flashing at joinings, fastenings, and other accessories shall be included.

2.5 COPINGS, JOINT COVERS, AND COUNTERFLASHINGS

- 1. Material as shown in Drawings.
- 2. Accessories: Joint covers, corners, supports, strip flashing at joinings, fastening, and other accessories shall be included.

2.6 RIDGE CAP, STARTER STRIP, SIDE/HEAD WALL, AND DRIP FLASHINGS

- 1. Material as shown in Drawings.
- 2. Accessories: Joint covers, corners, supports, strip flashing at joinings, fastening, and other accessories shall be included.

2.7 TERMINATION BARS

- 1. Shall be aluminum unless otherwise recommended by membrane manufacturers.

2. Material shall be .125" x 1" (minimum) aluminum conforming to ASTM B221, mill finish. Bar shall have caulk cup as required.

2.8 FABRICATION, GENERAL

1. Sheet Metal Fabrication Standard:
 1. Fabricate sheet metal flashing and trim to comply with recommendations of the latest edition of the Architectural Sheet Metal Manual that apply to the design, dimensions, metal, and other characteristics of the item indicated.
2. Shop Fabrication
 1. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 2. Form exposed sheet metal work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.
3. Seams:
 1. Space joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Provide joint details in compliance with the recommendations of the latest edition of the Architectural Sheet Metal Manual for the thickness, girth, and type of metal.
4. Dissimilar Metals
 1. Separate flashings from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.
5. Attachment:
 1. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
 2. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
 3. Size cleats as recommended by the latest edition of the Architectural Sheet Metal Manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

PART 3 - EXECUTION

3.1 EXAMINATION

1. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
 1. Verify compliance with requirements for installation tolerances of substrates.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
2. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

1. General:
 1. Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and the recommendations of the latest edition of the Architectural Sheet Metal Manual. Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.
 2. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surface to be covered before fabricating sheet metal.
 3. Roof-Edge Flashing: Secure metal flashing at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone.
 4. In locations where roof perimeter fascia exceeds a vertical face height of 8", fascia shall be installed with formed angles in the face to add rigidity and reduce out of flat appearance. Where vertical face height exceeds 12", a minimum of two formed angles shall be provided.
 5. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked

flanges, not less than one inch deep, filled with mastic sealant (concealed within joints).

6. Sealed Joints: Form non-expansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant.
7. Seams: Fabricate non-moving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.
8. Separations: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.
 - a. Underlayment: Where installing stainless steel or aluminum directly on cementitious or wood substrates, install a slip sheet of red-rosin paper and a course of polyethylene underlayment.
 - b. Bed flanges of Work in a thick coat of roofing cement where required for waterproof performance.
9. Reglets: Install reglets to receive counterflashing.
10. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflashing. Install counterflashings in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflashing joints a minimum of 2 inches and bed with sealant.
11. Roof-Drainage System: Install drainage items fabricated from sheet metal, with straps, adhesives, and anchors recommended by SMACNA's Manual or the item manufacturer, to drain roof in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation. Coordinate flashing and sheet metal item for steep- sloped roofs with roofing installation.
 - a. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored gutter brackets and straps spaced not more than 36 inches apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
 - 1) Fasten gutter spacers to front and back of gutter.
 - 2) Loosely lock straps to front gutter bead and anchor to roof deck.
 - 3) Anchor and loosely lock back edge of gutter to continuous cleat.
 - 4) Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.
 - b. Downspouts: Join sections with 1-1/2-inch telescoping joints.
 - 1) Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c. in between.
 - 2) Provide elbows at base of downspout to direct water away from building.

- c. Parapet Scuppers: Install scuppers where indicated through parapet. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
 - 1) Anchor scupper closure trim flange to exterior wall and seal with elastomeric sealant to scupper.
 - 2) Loosely lock front edge of scupper with conductor head.
 - 3) Seal with elastomeric sealant exterior wall scupper flanges into back of conductor head.
 - d. Conductor Heads: Anchor securely to wall with elevation of conductor head rim 1 inch below scupper discharge. Flash Scupper over back of conductor head.
- 12. Equipment Support Flashing, Coordinate equipment support flashing installation with roofing and equipment installation. Weld or seal flashing to equipment support member.
 - 13. Roof-Penetration Flashing: Coordinate roof-penetration flashing installation with roofing and installation of items penetrating roof. Install flashing as follows:
 - a. Seal and clamp flashing to pipes penetrating roof, other than lead flashing on vent piping.

3.3 CLEANING AND PROTECTION

- 1. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.
- 2. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION 076200

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SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Pipe supports.
 - 2. Preformed flashing sleeves.
- B. Related Sections:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.
 - 2. Section 076200 "Sheet Metal Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.

1.3 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

1.4 ACTION SUBMITTALS

- A. Submit under provisions of Section 013100 "Submittal Procedures."
- B. All submittals shall be subject to the Owner's review and approval.
- C. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

- D. Shop Drawings: For roof accessories. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.
- E. Samples: For each exposed product and for each color and texture specified, prepared on Samples of size to adequately show color.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
 - 1. Size and location of roof accessories specified in this Section.
 - 2. Method of attaching roof accessories to roof or building structure.
 - 3. Other roof-mounted items including mechanical and electrical equipment, ductwork, piping, and conduit.
 - 4. Required clearances.
- B. Warranty: Sample of special warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For roof accessories to include in operation and maintenance manuals.

1.7 COORDINATION

- A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
- B. Coordinate dimensions with rough-in information or field verified dimensions.

1.8 WARRANTY

- A. Special Warranty on Painted Finishes: Manufacturer's standard form in which manufacturer agrees to repair finishes or replace roof accessories that show evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.

2. Finish Warranty Period: Ten 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 METAL MATERIALS

- A. Aluminum Sheet: ASTM B 209, manufacturer's standard alloy for finish required, with temper to suit forming operations and performance required.
1. Mill Finish: As manufactured.
- B. Aluminum Extrusions and Tubes: ASTM B 221, manufacturer's standard alloy and temper for type of use, finished to match assembly where used, otherwise mill finished.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, thickness as indicated.
- C. Wood Nailers: Softwood lumber, pressure treated with waterborne preservatives for aboveground use, acceptable to authorities having jurisdiction, containing no arsenic or chromium, and complying with AWWA C2; not less than 1-1/2 inches thick.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.
- E. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide non-removable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
- F. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.
- G. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane or silicone polymer sealant as recommended by roof accessory manufacturer for installation indicated; low modulus; of type, grade, class, and use classifications required to seal joints and remain watertight.
- H. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for expansion joints with limited movement.

2.3 APPROVED EQUIVALENT

- A. The Contractor must submit any specific product not specified below per the directions laid out in Section 016300 "Substitution Procedures."

2.4 PIPE SUPPORTS

- A. Pipe Supports: Adjustable-height, extruded-aluminum tube, filled with urethane insulation; 2 inches in diameter; with aluminum baseplate, EPDM base seal, manufacturer's recommended hardware for mounting to structure or structural roof deck as indicated, and extruded-aluminum carrier assemblies; suitable for quantity of pipe runs and sizes.
- B. Light-Duty Pipe Supports: Extruded-aluminum base assembly and Type 304 stainless-steel roller assembly for pipe sizes indicated, including manufacturer's recommended load-distributing baseplate.
- C. Duct Supports: Extruded-aluminum, urethane-insulated supports, 2 inches in diameter; with manufacturer's recommended hardware for mounting to structure or structural roof deck.

2.5 PREFORMED FLASHING SLEEVES

- A. Exhaust Vent Flashing: Double-walled metal flashing sleeve or boot, insulation filled, with integral deck flange, 12 inches high, with removable metal hood and slotted metal collar.
- B. Vent Stack Flashing: Metal flashing sleeve, uninsulated, with integral deck flange.

2.6 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- C. Verify dimensions of roof openings for roof accessories.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General: Install roof accessories according to manufacturer's written instructions.
 - 1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
 - 2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
 - 3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
 - 4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
 - 1. Coat concealed side of uncoated aluminum or stainless-steel roof accessories with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 - 2. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
 - 3. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
- C. Pipe Support Installation: Install pipe supports so top surfaces are in contact with and provide equally distributed support along length of supported item.
- D. Preformed Flashing-Sleeve Installation: Secure flashing sleeve to roof membrane according to flashing-sleeve manufacturer's written instructions.
- E. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

3.3 REPAIR AND CLEANING

- A. Clean exposed surfaces according to manufacturer's written instructions.
- B. Clean off excess sealants.
- C. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200

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SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. This project may require extended work hours in order to meet the completion date. See Division 00 Specification Sections for Phasing and Schedule Requirements.

1.2 SUMMARY

- A. Section Includes:
 - 1. Nonsag gunnable joint sealants.
 - 2. Self-leveling pourable joint sealants.
 - 3. Joint backings and accessories.

1.3 REFERENCE STANDARDS

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer; 2006 (Reapproved 2011).
- B. ASTM C834 - Standard Specification for Latex Sealants; 2017.
- C. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012 (Reapproved 2017).
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.
- E. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.
- F. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- G. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants; 2002 (Reapproved 2013).

1.4 SUBMITTALS

- A. Submit under provisions of Section 013100 "Submittal Procedures."
- B. All submittals shall be subject to the Owner's review and approval.

- C. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
 - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
 - 2. List of backing materials approved for use with the specific product.
 - 3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
 - 4. Substrates the product should not be used on.
 - 5. Substrates for which use of primer is required.
 - 6. Substrates for which laboratory adhesion and/or compatibility testing is required.
 - 7. Installation instructions, including precautions, limitations, and recommended backing materials and tools.
 - 8. Sample product warranty.
 - 9. Certification by manufacturer indicating that product complies with specification requirements.
- D. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- E. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.
- F. Samples for Verification: Where custom sealant color is specified, obtain directions from Architect and submit at least two physical samples for verification of color of each required sealant.

1.5 QUALITY ASSURANCE

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

1.6 WARRANTY

- A. Correct defective work within a five (5) year period after Date of Substantial Completion.
- B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.
 - 1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.
- C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- D. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 MANUFACTURERS

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
 - 1. Dow Corning Corporation: www.dowcorning.com/construction/sle.
 - 2. Master Builders Solutions by BASF: www.master-builders-solutions.basf.us/en-us/#sle.
 - 3. Pecora Corporation: www.pecora.com.
 - 4. Sherwin-Williams Company: www.sherwin-williams.com.
 - 5. Sika Corporation: www.usa-sika.com.
 - 6. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
 - 7. W.R. Meadows, Inc: www.wrmeadows.com/sle.
 - 8. Substitutions: See Section 016000 – “Product Requirements.”

- B. Self-Leveling Sealants: Pourable or self-leveling sealant that has sufficient flow to form a smooth, level surface when applied in a horizontal joint.
1. Dow Corning Corporation: www.dowcorning.com/construction/sle.
 2. Master Builders Solutions by BASF: www.master-builders-solutions.basf.us/en-us/#sle.
 3. Pecora Corporation: www.pecora.com.
 4. Sherwin-Williams Company: www.sherwin-williams.com.
 5. Sika Corporation: www.usa-sika.com.
 6. Tremco Commercial Sealants & Waterproofing: www.tremcosealants.com/#sle.
 7. W.R. Meadows, Inc: www.wrmeadows.com/sle.
 8. Substitutions: See Section 016000 – “Product Requirements.”

2.3 JOINT SEALANT APPLICATIONS

- A. Scope:
1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. Joints between different exposed materials.
 - c. Other joints indicated below.
 2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
 - a. Joints between door, window, and other frames and adjacent construction.
 - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
 - c. Other joints indicated below.
 3. Do not seal the following types of joints.
 - a. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.
 - b. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
 - c. Joints where installation of sealant is specified in another section.
 - d. Joints between suspended panel ceilings/grid and walls.

- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.
 - 1. Lap Joints in Sheet Metal Fabrications: Butyl rubber, non-curing.
- C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
 - 1. Wall and Ceiling Joints in Non-Wet Areas: Acrylic emulsion latex sealant.
 - 2. In Sound-Rated Assemblies: Acrylic emulsion latex sealant.
 - 3. Other Floor Joints: Self-leveling polyurethane "traffic-grade" sealant.
- D. Sound-Rated Assemblies: Walls and ceilings identified as "STC-rated", "sound-rated", or "acoustical".

2.4 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
 - 3. Color: Match adjacent finished surfaces, to be approved by Architect.
 - 4. Cure Type: Single-component, neutral moisture curing.
 - 5. Service Temperature Range: Minus 65 to 180 degrees F (Minus 54 to 82 degrees C).
- B. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Hardness Range: 20 to 35, Shore A, when tested in accordance with ASTM C661.
 - 3. Color: Match adjacent finished surfaces.
 - 4. Service Temperature Range: Minus 40 to 180 degrees F (Minus 40 to 82 degrees C).
- C. Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
 - 1. Color: Standard colors matching finished surfaces, Type OP (opaque).

- D. Non-Curing Butyl Sealant: Solvent-based; ASTM C1311; single component, non-sag, non-skinning, non-hardening, non-bleeding; vapor-impermeable; intended for fully concealed applications.

2.5 SELF-LEVELING SEALANTS

- A. Self-Leveling Polyurethane Sealant: ASTM C920, Grade P, Uses M and A; single or multi-component; explicitly approved by manufacturer for traffic exposure; not expected to withstand continuous water immersion.
 - 1. Movement Capability: Plus and minus 25 percent, minimum.
 - 2. Hardness Range: 35 to 55, Shore A, when tested in accordance with ASTM C661.
- B. Rigid Self-Leveling Polyurethane Joint Filler: Two part, low viscosity, fast setting; intended for cracks and control joints not subject to significant movement.
 - 3. Hardness Range: Greater than 100, Shore A, and 50 to 80, Shore D, when tested in accordance with ASTM C661.

2.6 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
 - 4. Type for Joints Not Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type O - Open Cell Polyurethane.
 - 5. Open Cell: 40 to 50 percent larger in diameter than joint width.
- B. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- C. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.
- D. Joint Cleaner: Non-corrosive and non-staining type, type recommended by sealant manufacturer; compatible with joint forming materials.
- E. Primers: Type recommended by sealant manufacturer to suit application; non-staining.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

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

3.3 INSTALLATION OF JOINT SEALANTS

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Non-sag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.
 4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
 5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 079200

**WEST DES MOINES COMMUNITY
SCHOOL (WDMCS) DISTRICT
VALLEY SOUTHWOODS ROOFING REPLACEMENT**

**JOINT SEALANTS
Section 079200 - Page 10**

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SECTION 099123 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. In general, this section includes new finishes on all exposed surfaces within the building or added to the exterior of the building unless specifically excluded on the drawings or room finish schedule.
- B. Section includes surface preparation and the application of paint systems on the following new and existing substrates:
 - 1. Concrete.
 - 2. Clay masonry.
 - 3. Concrete masonry units (CMU).
 - 4. Steel.
 - 5. Galvanized metal.
 - 6. Wood.
 - 7. Gypsum board.
 - 8. Plaster.
- C. Section includes surface preparation and application of semi-transparent finishes on new and existing doors, door frames, wall bases, base shoes, door casings, window casings, window sills, door stops, map-rails, crown-molds and other woodwork, casework or trim profiles as indicated on the plans.
- D. Related Requirements:
 - 1. Section 061600 "Sheathing".
 - 2. Section 061000 "Rough Carpentry".

1.3 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.
- B. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

- C. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.
- D. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- E. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- F. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Initial Selection: For each type of topcoat product.
- C. Samples for Verification: For each type of paint and finish system and in each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Step coats on Samples to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- D. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint and finish system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Paint: Five (5) percent, but not less than 1 gal. of each material and color applied.
 - 2. Stains and Transparent Finishes: Five (5) percent, but not less than 1 gal. of each material and color applied.

1.6 QUALITY ASSURANCE

- A. Mockups: Apply mockups of each paint and finish system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint and finish system specified in Part 3.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft..
 - b. Other Items: Architect will designate items or areas required.
2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.
3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45° F.
 1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

- A. Apply paints and finishes only when temperature of surfaces to be painted or finished and ambient air temperatures are between 50° and 85° F.
- B. Do not apply paints and finishes when relative humidity exceeds 85 percent; at temperatures less than 5° F above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior finishes in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Benjamin Moore & Co.
 2. Diamond Vogel Paints.
 3. ICI Paints.
 4. PPG Architectural Finishes, Inc.

5. Sherwin-Williams Company (The).

- B. Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to products listed in other Part 2 articles for the paint and finish category indicated.

2.2 MATERIALS, GENERAL

- A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."
- B. Material Compatibility:
1. Provide materials for use within each paint and finish system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint or finish system, provide products recommended in writing by manufacturers of topcoat for use in paint or finish system and on substrate indicated.
- C. Paint Colors: As selected by Architect from manufacturer's full range.
1. Basis-of-Design Color selections as shown on Drawings.
- D. Finish/Stain Colors: Flat (ceilings), Satin (walls), Semi-Gloss (door frames)

2.3 SOURCE QUALITY CONTROL

- A. Testing of Paint and Finish Materials: Owner reserves the right to invoke the following procedure:
1. Owner may engage the services of a qualified testing agency to sample paint and finish materials. Contractor will be notified in advance and may be present when samples are taken. If paint and finish materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
 2. Testing agency will perform tests for compliance with product requirements.
 3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint and finish materials from Project site, pay for testing, and repaint or refinish surfaces painted or finished with rejected materials. Contractor will be required to remove rejected materials from previously painted or finished surfaces if, on repainting or refinishing with complying materials, the two paints or finishes are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Masonry (Clay and CMU): 12 percent.
 - 3. Exterior Wood: 15 percent.
 - 4. Interior Wood: 10 percent.
 - 5. Gypsum Board: 12 percent.
 - 6. Plaster: 12 percent.
- C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
- D. Plaster Substrates: Verify that plaster is fully cured.
- E. Spray-Textured Substrates: Verify that surfaces are dry.
- F. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- G. Proceed with coating application only after unsatisfactory conditions have been corrected.
 - 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted or finished. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting or finishing.
 - 1. After completing painting and finishing operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints or finishes, including dust, dirt, oil, grease, and incompatible paints or finishes and encapsulants.

1. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce paint or finish systems indicated.
 2. Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.
 3. Remove mildew by scrubbing with a commercial wash formulated for mildew removal and as recommended by stain manufacturer.
- D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.
- E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.
- F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer.
- G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.
- H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.
- I. Existing Walls & Ceilings: Remove loose paint or plaster, patch & blend with existing adjacent textures. Sand out voids or ridges in existing finish to produce a smooth, uniform surface.

3.3 APPLICATION

- A. Apply paints and finishes according to manufacturer's written instructions and to recommendations in "MPI Manual."
1. Use applicators and techniques suited for paint and finish and substrate indicated.
 2. Paint and finish surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint and finish surfaces behind permanently fixed equipment or furniture with prime coat only.
 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 4. Do not paint or finish over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 5. Primers specified in painting or finishing schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints and finishes to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Painting Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - 1. Paint the following work where exposed to view:
 - a. Uninsulated & Insulated metal piping and fittings.
 - b. Uninsulated & Insulated plastic piping and fittings.
 - c. Pipe hangers and supports.
 - d. Pipe hangers and supports.
 - e. Metal or Plastic conduit and junction boxes.
 - f. Tanks that do not have factory-applied final finishes.
 - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering, paint-grade galvanization or other paintable jacket material.
 - h. Portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are exposed to view.
 - i. Other items as directed by Architect.
 - 2. DO NOT Paint the following work where exposed to view:
 - a. Telecommunications cables, raceway and other telecommunication devices.
 - 1) DO NOT PAINT CABLE - If a cable is inadvertently painted, it shall be hereby defined as damaged. The cable shall be replaced, in its entirety, by the Contractor at their expense.
 - 2) DO NOT PAINT PLASTIC SURFACE MOUNT RACEWAY OR DEVICE BOXES - The Panduit LDPH10 surface mount raceway and the data termination boxes shall not be painted.
 - 3) CLEANING NOT ACCEPTABLE - Cleaning of painted cable is not acceptable.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint and finishes for dry film thickness.
 - 1. Contractor shall touch up and restore painted or finished surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint or finish does not comply with paint or finish manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film

thickness that complies with paint or finish manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint or finish application, clean spattered surfaces. Remove spattered paints and finishes by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint or finish application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted and finished surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

- A. Steel Substrates:
 - a. Prime Coat: Primer, alkyd, anticorrosive for metal, MPI #79.
 - b. Prime Coat: Shop primer specified in Section 055000 "Metal Fabrications" where substrate is specified.
 - c. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - d. Topcoat: Alkyd, exterior, semi-gloss (Gloss Level 5), MPI #94.
- B. Galvanized-Metal Substrates:
 - a. Prime Coat: Primer, galvanized metal, as recommended in writing by topcoat manufacturer for exterior use on galvanized-metal substrates with topcoat indicated.
 - b. Intermediate Coat: Exterior alkyd enamel matching topcoat.
 - c. Topcoat: Alkyd, exterior, semi-gloss (Gloss Level 5), MPI #94.

3.7 INTERIOR PAINTING AND FINISHING SCHEDULE

- A. Gypsum Sheathing Substrates:
 - a. Prime Coat: Latex, exterior, matching topcoat.
 - b. Intermediate Coat: Latex, exterior, matching topcoat.
 - c. Topcoat: Latex, exterior, low sheen (Gloss Level 3-4), MPI #15.

END OF SECTION 099123