

- C. UNIT PRICE NO. 2 - 18-GAUGE GALVANIZED PLATE AND INSTALLATION
 - 1. _____ Dollars (\$ _____)
per square foot
- D. UNIT PRICE NO. 3 - 3/16-INCH STEEL PLATE AND INSTALLATION
 - 1. _____ Dollars (\$ _____)
per square foot
- E. UNIT PRICE NO. 4 - ROOF DRAIN REPLACEMENT AT CONCRETE DECK
 - 1. _____ Dollars (\$ _____)
per drain

1.12 ALTERNATES

- A. The undersigned agrees that at the Owner's discretion, the Base Bid Sums may be altered as follows if the Alternate Prices indicated and defined in the Alternates Section and elsewhere in the Bidding Documents need to be executed (Failure to bid upon requested Alternate Prices shall indicate no change in the Base Bid Sum).
- B. ALTERNATE PRICE NO. 1 - 4-Year Extended Service & Maintenance Agreement not required by Contract Documents.
 - 1. Include a proposal amount which shall apply to all work included in the 4-Year Extended Service & Maintenance agreement as described in Section 01 2300 and related sections in the Project Manual.
 - 2. _____ Dollars (\$ _____)
4-year lump sum
 - 3. Non-Covered Repair Costs Time and Material Basis of Payment
 - a. Per Man-Hour \$ _____ per hour
 - b. Material Mark-Up _____ %

1.13 ADDENDA

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

1.14 BID FORM SIGNATURE(S)

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

END OF SECTION

**SECTION 00 5000
CONTRACTING FORMS AND SUPPLEMENTS**

PART 1 GENERAL

1.01 CONTRACTOR IS RESPONSIBLE FOR OBTAINING A VALID LICENSE TO USE ALL COPYRIGHTED DOCUMENTS SPECIFIED BUT NOT INCLUDED IN THE PROJECT MANUAL.

1.02 FORMS

- A. Use the following forms for the specified purposes unless otherwise indicated elsewhere in Contract Documents.
- B. Bid Form: Section 00 4100 - Bid Form.
- C. Procurement Form Supplements:
 - 1. Bid Security Form: AIA 310. See attached.
- D. Representations and Certifications:
 - 1. Bidder's Qualifications: AIA A305. See attached.

1.03 REFERENCE STANDARDS

- A. AIA A305 - Contractor's Qualification Statement; 1986.
- B. AIA A310 - Bid Bond; 2010.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 0000
GENERAL REQUIREMENTS**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 GENERAL DESCRIPTION OF REQUIREMENTS

- A. All bidders shall be held to have thoroughly examined all of the drawings and specifications and to have visited the site to determine the extent of reroofing and alteration work required. All measurements are the responsibility of the bidder.
- B. It is the declared and acknowledged intention and meaning of these specifications to repair, reroof and to alter the existing premises as required to provide a watertight roofing system.
- C. The work will include the furnishing of all materials and equipment and the performing of all labor required, whether or not specifically indicated by the plans and specifications, to provide a watertight roofing system.

1.03 PROJECT DESCRIPTION

- A. Project Name: Roof Replacement Specifications - C Wing, Areas 1,2,3,4 and A Wing, Area 10.
- B. Owner's Representative Name: Mr. Rob McCoy.
- C. Owner's Name: Wayne Regional Educational Service Agency.
- D. Roof Consultant's Name: Roofing Technology Associates, Ltd., Contact: Mr. Ron Kinne, (734)591-4444.
- E. The Project consists of reroofing C Wing, Areas 1,2,3,4 and A Wing, Area 10 located at the Wayne Regional Educational Service Agency, 33500 Van Born Road, Wayne, Michigan.
- F. Bidders are responsible for verifying the roof replacement square footage.

1.04 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 005000 - Contracting Forms and Supplements.

1.05 SEQUENCE OF OPERATIONS

- A. The various parts of the work shall be carried on in a manner which will best serve in providing for the continuous operations of all necessary functions of the existing buildings and to cause as little inconvenience to the public as practicable in their occupancy and use of the facilities.

1.06 WORKMANSHIP AND MATERIALS

- A. All materials and equipment shall be furnished, installed and completed in a first class, workmanlike manner as indicated in the Conditions of the Contract, on the accompanying drawings and in the technical specifications.

1.07 FIELD CONDITIONS AND DIMENSIONS

- A. The dimensions, details and other information provided relative to the existing work are furnished subject to verification by the Contractor. The Contractor shall verify all existing conditions and dimensions. No additional compensation will be granted for the Contractor's failure to comply with the above requirements.

1.08 MATERIALS AND SUBSTITUTIONS

- A. Whenever an article, material or item of equipment is defined by describing a proprietary product,

or by using the name of the manufacturer or vendor, the term "or equivalent," if not inserted, shall be implied. The specific article, material or item of equipment mentioned shall be understood as indicating the minimum requirements of fulfilling contract obligations in regard to type, function, standard of design and efficiency.

- B. Materials of manufacturers, other than those which may be named, will be given equal consideration, provided that written approval for the substitution is obtained from the Roof Consultant, and further provided that the Contractor shall be totally responsible for all costs incurred by dimension changes and weight changes occasioned by this substitution. No approvals concerning any phase of the Contract shall be valid unless given in writing by the Roof Consultant.

1.09 SHOP DRAWINGS AND PRODUCT DATA

- A. Prior to the delivery of any material or equipment to the job site, the Contractor shall check and verify all field measurements and existing conditions. Thereafter, the Contractor shall submit to the Roof Consultant, with such promptness as to cause no delay in the work, a minimum of three copies of shop drawings, product data catalogs, material schedules, etc. Following examination by the Roof Consultant, two copies will be retained for the Owner's use and remaining copies will be returned to the Contractor with indication of approval or with notations for correction.

1.10 TIME OF COMPLETION

- A. All work specified in the Contract Documents shall be completed within the specified time period. If, at any time during the life of this Contract, the Contractor finds that for reasons beyond his control it is impossible to complete the work within the specified time period fixed by the Contract, a written request for a change to the Contract extending the time of completion shall be submitted. Such a request shall set forth in precise detail the reasons believed to justify an extension and shall be in such format as the Owner may require.

1.11 MIOSHA SAFETY STANDARDS

- A. All work must be accomplished in accordance with all applicable Construction Safety Standards rules and regulations for Construction Operations, as set forth by the Michigan Department of Labor (MIOSHA).

1.12 SAFETY

- A. The Contractor shall furnish, install and maintain as long as necessary and remove when no longer required, adequate barriers, warning signs and lights at all dangerous points throughout the work for protection of staff, workmen, and the public. The Contractor shall hold the Owner harmless from damage or claims arising out of any injury or damage that may be sustained by any person or persons as a result of the work under the Contract. The Contractor shall hold the Owner harmless from fines resulting from the Contractor's failure to provide all required safety protection required by the Michigan Department of Labor (MIOSHA).

1.13 STRUCTURAL PROTECTION

- A. The Contractor shall furnish, install, and maintain adequate protection of existing building elements and finishes and adjacent structures from damage caused by his operations. The Contractor shall repair or replace any damaged building element or finish to match its condition prior to the start of the work and remove all protections when the work is complete.

1.14 TEMPORARY UTILITIES

- A. Water and electricity will be available in the area where work will be performed. The Contractor will not be charged for reasonable use of these services for construction operation. The Contractor

shall pay costs for installation and removal of any temporary connections including necessary safety devices and controls.

1.15 REPAIRS AND FINISHES

- A. Existing disturbed materials and equipment resulting from the construction operations shall be repaired and finished to match existing or adjacent finishes.
- B. The Contractor shall replace any glass that may be broken in the existing structure, resulting from and/or related to construction operations. All new glass shall match the existing construction.

1.16 REMOVAL OF DEBRIS AND CLEANING

- A. The Contractor shall continuously remove from the site all material and debris. No storage of removed items or debris will be permitted on the site unless so directed by the Owner.
- B. The premises shall be kept as clean as practical, consistent with the neatness required for the Owner's normal operations.

1.17 EXISTING MATERIAL AND EQUIPMENT REMOVED

- A. Contractor shall remove all fixed equipment designated to be removed.
- B. Items of existing equipment which are to be reused, shall be carefully removed, stored and protected, and later reinstalled in original or new locations as required.
- C. Certain materials, particularly specified, shall be reused in the work, such material shall be in good usable condition and shall be cleaned and conditioned as required for reuse.
- D. Contractor shall be responsible for all disconnecting, connecting, cutting, patching, finishing, moving and removing, and repairing, of both new and existing material and equipment as may be required to do all reroofing and alteration work.
- E. All existing material and equipment which is to remain in place or to be reused and has been damaged or defaced during the progress of the work, shall be restored to a condition equal to that which existed prior to the start of the work, or shall be replaced with new materials and equipment equal in all respects, and finished so as to be uniform in appearance to adjacent existing work.

1.18 SALVAGED MATERIALS

- A. Salvaged materials which are not to be reused will, unless otherwise specified, or verbally requested by the Owner's Representative, become the property of the Contractor and will be removed from the premises by him and legally disposed of off-site by him.

1.19 PROGRESS MEETINGS

- A. The Owner will schedule meetings to be held on the job site whenever needed supply information necessary to prevent job interruptions, to observe the work, or to inspect completed work. The Contractor shall be represented at each progress meeting by persons with full authority to act for the Contractor in regard to all portions of the work.

1.20 APPLICABLE CODES

- A. The Contractor shall comply with all applicable state and local rules and regulations relating to buildings, employment, the preservation of public health and safety, use of streets, and the performance of the work of this Contract.
- B. Should the Contractor perform any work knowing it to be contrary to existing laws, rules and regulations, and fail to give notice of such fact to the Owner, he shall bear all costs arising there from and hold the Owner harmless for such violation.
- C. Where the Contract Documents require the work or parts of the work to be done in accordance with a particular standard or code recognized in the building industry, and that cited code includes requirements above the standards required by state or local law, such work shall be completed in

accordance with the requirements of the Contract.

1.21 CONSTRUCTION SIGNS

- A. No signs regarding advertisement of any kind may be erected or displayed on the site. The Roofing Contractor shall provide all signs, barricades, etc. to alert, warn and/or protect the general public, building employees and their own personnel against the on-going reroofing operations in accordance with all applicable Construction Safety Standards (MIOSHA).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 2000
PRICE AND PAYMENT PROCEDURES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

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

1.03 RELATED REQUIREMENTS

- A. Section 00 5000 - Contracting Forms and Supplements: Forms to be used.
- B. Section 01 2200 - Unit Prices: Monetary values of unit prices; Payment and modification procedures relating to unit prices.

1.04 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standardform specified; submit draft to Roof Consultant for approval.
- B. Forms filled out by hand will not be accepted.
- C. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- D. Revise schedule to list approved Change Orders, with each Application For Payment.

1.05 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standardform specified; submit sample to Roof Consultant for approval.
- C. Forms filled out by hand will not be accepted.
- D. For each item, provide a column for listing each of the following:
 - 1. Item Number.
 - 2. Description of work.
 - 3. Scheduled Values.
 - 4. Previous Applications.
 - 5. Work in Place and Stored Materials under this Application.
 - 6. Authorized Change Orders.
 - 7. Total Completed and Stored to Date of Application.
 - 8. Percentage of Completion.
 - 9. Balance to Finish.
 - 10. Retainage amount indicated in the Contract.
- E. Execute certification by signature of authorized officer.
- F. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- G. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- H. Submit one electronic and three hard-copies of each Application for Payment.
- I. Include the following with the application:
 - 1. Transmittal letter as specified for submittals in Section 01 3000.

2. Partial release of liens from major subcontractors and vendors.
- J. When Roof Consultant requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.06 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Roof Consultant will issue instructions directly to Contractor.
- B. Roof Consultant will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract by issuing documents containing supplemental instructions.
- C. For other required changes, Roof Consultant will issue a document signed by Owner instructing Contractor to proceed with the change, for subsequent inclusion in a Change Order.
 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
 2. Promptly execute the change.
- D. For changes for which advance pricing is desired, Roof Consultant will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within seven days.
- E. Contractor may propose a change by submitting a request for change to Roof Consultant, describing the proposed change and its full effect on the work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation.
- F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 1. For change requested by Roof Consultant for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Roof Consultant.
 3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
 4. For change ordered by Roof Consultant without a quotation from Contractor, the amount will be determined by Roof Consultant based on the Contractor's substantiation of costs as specified for Time and Material work.
- G. Substantiation of Costs: Provide full information required for evaluation.
 1. On request, provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.

- H. Execution of Change Orders: Roof Consultant will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- I. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

1.07 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All punchlist items have been satisfactorily completed as determined by the Roof Consultant.
 - 2. Applications for warranties have been issued.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 2200
UNIT PRICES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
- C. Defect assessment and non-payment for rejected work.

1.03 RELATED REQUIREMENTS

- A. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

1.04 COSTS INCLUDED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.06 MEASUREMENT OF QUANTITIES

- A. Take all measurements and compute quantities. Measurements and quantities will be verified by Roof Consultant.

1.07 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Roof Consultant, multiplied by the unit price.
- B. Payment will not be made for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products remaining on hand after completion of the Work.
 - 4. Loading, hauling, and disposing of rejected Products.

1.08 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not complying with specified requirements.
- B. If, in the opinion of Roof Consultant, it is not practical to remove and replace the Work, Roof Consultant will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Roof Consultant.
 - 2. The defective Work will be partially repaired to the instructions of the Roof Consultant, and the unit price will be adjusted to a new unit price at the discretion of Roof Consultant.
- C. The authority of Roof Consultant to assess the defect and identify payment adjustment is final.

1.09 SCHEDULE OF UNIT PRICES

- A. State in the Bid Form, in the space provided therefore, the amount to be added to the Base Bid for each requested price.
- B. UNIT PRICE NO. 1 - Replace, as necessary and designated by the Owner's Representative, deteriorated wood nailers. The price quoted shall be per lineal foot or per square foot as installed including replacement labor. Quote a price for the following sizes:
 - 1. 2" x 4"
 - 2. 2" x 6"
 - 3. 2" x 8"
 - 4. 2" x 10"
 - 5. 2" x 12"
 - 6. 3/4-inch plywood
- C. UNIT PRICE NO. 2 - Repair isolated concrete deck damage or openings not exceeding 6 inches x 6 inches with galvanized 18-gauge flat stock extending a minimum of 6-inches beyond the damaged area in all directions. Secure the plate with Tapcon screws spaced 12-inches on-center around the perimeter of the plate. The price quoted shall be per square foot of plate installed.
- D. UNIT PRICE NO. 3 - Repair isolated concrete deck holes and damage not exceeding 12-inches by 12-inches with 3/16-inch thick steel plate extending a minimum of 6-inches beyond the damaged area in each direction. Secure the plate with the specified fasteners spaced 12-inches on-center around the perimeter of the plate. The price quoted shall be per squarefoot of plate installed.
- E. UNIT PRICE NO. 4 - Replace deteriorated drain bowls, if necessary and as directed by the Owner's Representative, to provide watertight drain assemblies. Install in accordance with state and local building codes. Quote a price per roof drain bowl removed and replaced in the concrete roof deck, including labor.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 2300
ALTERNATES**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Description of Alternates.
- B. Documentation of changes to Contract Price and Contract Time.

1.03 ACCEPTANCE OF ALTERNATES

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

1.04 LIST OF ALTERNATES

- A. Alternate Price No. 1 - 4-Year Extended Service & Maintenance Agreement
 - 1. Provide the Owner with pricing to provide standard service and maintenance of the newly installed roofing systems on C Wing Areas 1,2,3 and 4 and A Wing Area 10. Price to include comprehensive bi-annual roof inspections by qualified individuals as part of the preventative maintenance contract. Quote a lump sum price for four years in the space provided on the Bid Form.
 - 2. Maintenance program involves the following services:
 - a. Clean all roof drains
 - b. Repair all membrane damage from punctures
 - c. Clean roof areas where ponding water accumulates
 - d. Inspection of all flashings at penetrations, curbs, doors and walls
 - e. Inspection of all seams in the field of the roof
 - f. Resecure loose sheet metal edging and counterflashing
 - g. Apply caulk to roof areas as needed
 - h. Priority service for roof emergencies within 24 hours
 - i. Provide the Owner with inspection reports for each bi-annual inspection
 - j. Provide the Owner with photographic documentation of conditions before and after repair
 - 3. Include time and material prices for repairs not covered by this agreement in the space provided on the Bid Form.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SITE USE BY THE CONTRACTOR

- A. The Contractor shall have designated for his use by the Owner, an area or room on the premises where he will confine his equipment and store all of his materials. New materials delivered to and stored outdoors on the job site shall be fully protected from weather by placement on raised platforms and shall have secure waterproof coverings of plastic or tarpaulins.
- B. No field offices or storage buildings will be allowed at the subject site.

1.03 ROADWAYS, DRIVES, PARKING AREAS AND SIDEWALKS

- A. The Contractor is responsible for the condition of all existing roadways, sidewalks, site (grass/sod, grading) etc., used during construction operations and shall repair same as required and leave same in good condition at the completion of the job.

1.04 BARRICADES AND PROTECTION

- A. The property on which work is to be done is in use. This means that employees and other general public may be adjacent to and below the construction operations.
- B. The Contractor will provide and maintain in good repair all barricades, guard railings and temporary protection as required by law and/or to suit job conditions.
- C. The Contractor shall do everything possible to protect the public, the workmen, the premises and adjoining property from injury or damage.
- D. Properly protect all sidewalks, pavements, existing building areas, building facades, windows and skylights. Replace or repair all parts of same which become damaged or defaced during or as a result of construction operations. Repairing of damaged parts shall be done in strict accordance with all local codes and ordinances and the Owner as conditions require.

1.05 VANDALISM

- A. The Contractor shall pay for all damage by vandalism to material or equipment that occurs to items finished or installed under this Contract. The Contractor shall be responsible for the work under this Contract during the construction period from the start until the final acceptance of the entire project by the Owner.

1.06 PROTECTION

- A. Provide and erect all required barricades and safety precautions in accordance with local, State and Federal Codes and other legal requirements.
- B. Provide secure, weatherproof protection for existing buildings, finishes, walks, drives, landscaping, lawns, etc., to remain. Repair any damage to the satisfaction of the Owner.
- C. Remove all protection and guards when work is completed and restore disturbed areas.
- D. Whenever lifting materials or equipment over or near existing or occupied buildings, give advance notice and arrange to have any potentially endangered spaces vacated.
- E. Maintain clear, unobstructed and clearly marked building emergency egress routes as required by Owner.

1.07 TEMPORARY WEATHER PROTECTION

- A. The Contractor shall provide, maintain and pay for all temporary weather protection as required to

properly protect all parts of the work from damage. This shall include temporary protective coverings.

1.08 RUBBISH DISPOSAL, FIRE SAFETY

- A. During non-construction hours, trash containers shall be covered and sealed to prevent wind blown debris and access into trash containers.
- B. The location of the trash containers shall be subject to the approval of the Owner.
- C. All rubbish and debris shall be removed from the site daily or more often if directed by the Owner's Representative. Burning of trash on-site shall not be allowed.
- D. No open fire shall be permitted on the building site at any time.
- E. The Roofing Contractor must use an Owner approved hauler and landfill. Provide the Owner with copies of the dumpster receipts for each dumpster.

1.09 REMOVAL OF TEMPORARY WORK

- A. All temporary structures, barricades, protection and similar work shall be removed by the Contractor at completion of the project or when directed. Any repairs or alterations necessitated by such removal shall be made by the Contractor, and at the Contractor's expense.

1.10 WORK ACTIVITIES

- A. Contractors and subcontractors shall direct their employees to conduct themselves so as not to interfere with or disrupt the building activities. The Contractor shall schedule construction operations to minimize interference with operations, and cooperate with Owner's Representative in maintaining public access to existing building facilities.
- B. All construction operations, delivery and storage of material and movement of equipment shall be governed by applicable local building codes, traffic regulation and safety and fire regulation of local authorities.
- C. Contractors, subcontractors, and their employees or suppliers shall not use or interfere with existing public access, drives, roads or parking lot, except as specifically indicated or by prior arrangement with the Owner's Representative.
- D. Contractor's employees parking, delivery trucks and other construction vehicle parking shall only be at areas designated by the Owner's Representative.
- E. Proper personal ID will be required by contractors, subs and their employees each time they enter Owner's site.

1.11 TEMPORARY RESTROOM FACILITIES

- A. The Roofing Contractor will provide and maintain temporary restroom facilities for the Roofing Contractor's employees during the course of the project. The restrooms in the interior of the building will not be accessible to the Contractor's employees.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

**SECTION 07 2100
THERMAL INSULATION**

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Rigid board type roof insulation for thermal protection as part of roofing assemblies.
- B. Flat and tapered polyisocyanurate roof insulation.
- C. High density polyisocyanurate cover board.
- D. Self-adhering vapor retarder.

1.03 RELATED REQUIREMENTS

- A. Section 07 5300 - Elastomeric Membrane Roofing.

1.04 REFERENCE STANDARDS

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2021.

1.05 SUBMITTALS

- A. Product Data: Provide data on product characteristics, performance criteria, and product limitations.
- B. Tapered Insulation Layout Plan: Roof plan showing the layout of the tapered insulation system by the approved tapered insulation manufacturer.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver insulation in manufacturer's original unbroken wrappers labeled with material name, thermal value, and product code.
- B. When stored outdoors, stack insulation on pallets above ground or roof deck and cover with tarpaulin or other suitable waterproof coverings. Secure the waterproof coverings against wind damage.
- C. Protect the rigid roof insulation from the weather and standing moisture at all times. Manufacturer's wrappers shall not relieve the Contractor from the responsibility to protect insulation from moisture. Insulation that becomes wet or damp shall be removed from the site. Installation of once wet or damp materials will not be permitted.

1.07 FIELD CONDITIONS

- A. Do not install insulation on roof deck when water of any type is present.
- B. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers: Subject to compliance with requirements:
 - 1. Carlisle SynTec Incorporated, SecurShield CD Polyiso, SecurShield CD Polyiso Tapered, and SecurShield HD Plus Polyiso.
 - 2. Firestone Building Products Company, Resista Polyisocyanurate Insulation, Resista Tapered Polyisocyanurate Insulation, and ISOGARD HD Cover Board.
 - 3. Hunter Panels, H-Shield CG Polyisocyanurate Insulation, H-Shield CG Tapered

- 4. Polyisocyanurate Insulation, and H-Shield HD Cover Board.
- 4. Johns Manville, ENRGY 3 CGF Polyisocyanurate Insulation, ENRGY 3 CGF Tapered Polyisocyanurate Insulation, and Invinsa Roof Board.
- B. Provide all roof board insulation from a single manufacturer.
- C. Insulation must be acceptable by the selected membrane manufacturer.

2.02 MATERIALS

- A. Flat Stock Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 2, Class 3.
 - 1. Thermal Resistivity (R-value): 5.6 at 75 degrees F per 1.0-inch thick insulation board.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Provide thicknesses as required.
- B. Tapered Roof Insulation: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 2, Class 3.
 - 1. Slope: 1/8-inch per foot.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Minimum thickness: 5-1/2-inches in Areas 2, 3 and 10.
 - 5. Minimum thickness: 2-1/2-inches in Areas 1 and 4.
- C. Tapered Roof Insulation at Roof Drains (8-feet by 8-feet): Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 2, Class 3.
 - 1. Slope: 1/4-inch per foot.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Minimum thickness: 4-1/2-inches in Area 2,3 and 10.
 - 5. Minimum thickness: 1-1/2-inches in Areas 1 and 4.
- D. Tapered Roof Insulation for Saddles: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Grade 2, Class 3.
 - 1. Slope: 1/2-inch per foot.
 - 2. Compressive Strength: 25 psi.
 - 3. Maximum size: 4-feet by 4-feet.
 - 4. Minimum thickness: 1/2-inch.
- E. Cover Board: Closed-cell polyisocyanurate foam core with non-HCFC blowing agent, integrally laminated to glass coated facers; conform to ASTM C 1289, Type II, Class 4, Grade 1.
 - 1. Thermal Resistivity (R-value): 2.5 at 75 degrees F for 0.5-inch thick insulation board.
 - 2. Compressive Strength: 80 psi minimum.
 - 3. Maximum size: 4-feet by 4-feet.
- F. Vapor Retarder: Self-adhering, 40 mil, SBS modified sheet with a polyethylene or polyolefin surfacing and a plastic release film. ASTM D1970. Roll width: 3.3-feet. Approved manufacturers:
 - 1. Carlisle SynTec Incorporated: 725 Air and Vapor Barrier
 - 2. Firestone Building Products Company: V-Force Vapor Barrier Membrane
 - 3. Johns Manville: JM Vapor Barrier SA
- G. Self-Adhering Sheet Primer: Solvent based substrate primer designed for use prior to the application of self-adhering vapor retarder membrane. Approved manufacturers:
 - 1. Carlisle SynTec Incorporated: CAV GRIP Primer
 - 2. Firestone Building Products Company: V-Force SB Primer

3. Johns Manville: SA Primer

2.03 RELATED MATERIALS

- A. Insulation Adhesive For Use On the Roof Insulation: One or two-component, construction grade, insulating polyurethane low-rise adhesive. Approved manufacturers and products:
 - 1. Carlisle SynTec Incorporated, FAST Bag in a Box Adhesive.
 - 2. Firestone Building Products Company, I.S.O. Stick Adhesive.
 - 3. Johns Manville, Two-Part Urethane Insulation Adhesive.
 - 4. OMG Roofing Products, OlyBond 500 Insulation Adhesive.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine roof deck for suitability to receive insulation. Verify that substrate is dry, clean, and free of foreign material that will damage vapor retarder, insulation, hamper insulation adhesion or impede installation.
- B. Verify that the existing lightweight insulating concrete is completely removed and the concrete surfaces have cleaned and dried sufficiently to provide proper adhesion of the vapor retarder primer in accordance with the vapor retarder manufacturers requirements.
- C. Verify that roof curbs, wood nailers, equipment supports, vents, and other roof accessories, are secured properly.

3.02 INSTALLATION - VAPOR RETARDER

- A. Apply self-adhering primer on the concrete deck, roof curbs and walls at the rates indicated by the primer manufacturer's application instructions. Allow the primer to flash off.
- B. Install self-adhering vapor retarder with sidelaps and endlaps as recommended by the vapor retarder manufacturer's application instructions. Shingle lap joints on sloped substrates in the direction of drainage. Extend the vapor retarder membrane into the roof drains. Extend the vapor retarder membrane up the roof curbs and walls 12-inches minimum where possible. Extend the vapor retarder to the outside edge of parapets which are less than 12-inches tall. Seal the penetrations and edges as required by the vapor retarder manufacturer's application instructions. Roll the vapor retarder to promote adhesion.
- C. Insulation and roof membrane are to be installed the same day. The vapor retarder is not to be used as a temporary membrane.

3.03 INSTALLATION - AREAS 2, 3 AND 10 INSULATION

- A. Install 3-inch fill material and 1/4-inch per foot tapered insulation to form the 8-feet by 8-feet roof sump areas at the roof drains as shown on the Roof Plan. Start the roof sump insulation system at 4-1/2-inches. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 - 1. Adhere the tapered insulation and fill boards on the prepared vapor retarder surface in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- B. Install 1/8-inch per foot tapered insulation to form the 2-way or 4-way tapered system as shown on the Roof Plan. Start the tapered insulation system at 5-1/2-inches. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 - 1. Adhere the tapered insulation and fill boards on the prepared vapor retarder surface in 3/4-inch to 1-inch thick beads of the specified insulation adhesive. Bead spacing: 6-inches on center. Weigh down each board immediately until the adhesive sets up.
- C. Install tapered insulation to form the saddles as shown on the Roof Plan. Neatly cut to fit edges and penetrations. Fill gaps larger than 1/4-inch with matching insulation.
 - 1. Adhere the tapered insulation saddles on the layers of roof insulation in 3/4-inch to 1-inch

- Non-Reinforced EPDM membrane - Fully Adhered.
- b. Firestone Building Products Co, www.firestonebpco.com, RubberGard Platinum EPDM membrane - Fully Adhered.
 - c. Johns Manville, www.jm.com, EPDM NR 90 MIL.
- B. All details relating to the installation of the roof system shall be approved by the roofing manufacturer and installed in such a manner that the manufacturer will furnish its 30-year total system warranty for the installation.
 - C. Membrane shall be .090-inch thick, fire-retardant, EPDM (Ethylene Propylene Diene Monomer) compounded elastomer. Membrane sheet size shall be the largest sheet possible as determined by the job conditions.
 - D. All materials used in the roofing system shall be as furnished by the approved manufacturer. Seam tape, self-adhering flashing, adhesives, primers, sealant, water cut-off mastic and other required items shall be as furnished or recommended by the selected manufacturer.
 - E. Base Flashing shall be a .090-inch thick cured EPDM flashing sheet as furnished by the approved manufacturer.
 - F. Accessories: Prefabricated pipe flashings, termination bars, corner flashing, joint covers, reinforced perimeter attachment strips and perimeter edge termination plates and fasteners as required by the selected membrane manufacturer for use in their roof system assemblies.
 - G. Walk Pads shall be manufactured of heavy duty solid recycled rubber with a diamond textured as manufactured by:
 - 1. Humane Manufacturing Company, Roof-Gard Treadsafe, 36" x 48" x 3/4-inch thick, Part No. MAZ8272.
 - 2.

2.02 INSULATION

- A. See Section 07 2100 Thermal Insulation.

2.03 SHEET METAL FLASHING AND TRIM

- A. See Section 07 6200 Sheet Metal Flashing and Trim.

2.04 WOOD NAILERS

- A. Wood Nailers and Blocking: PS 20, construction grade lumber.
 - 1. Sizes: Nominal sizes as indicated on drawings, S4S.
 - 2. Moisture Content: S-dry or MC19.
 - 3. Species: SPF.
 - 4. Grade: No. 2.
- B. Plywood Sheathing: PS 1, Grade C-D, Exposure I. Thickness: 3/4-inch. APA Rated.
- C. Fasteners in contact with wood blocking and nailers shall be hot dipped galvanized nails in conformance with ASTM A153 unless otherwise specified.

2.05 MISCELLANEOUS

- A. Plates to cover small holes in the concrete deck and/or isolated areas of deterioration shall be 18-gauge galvanized steel.
- B. Replacement roof drains and accessories shall be cast iron as manufactured by J. R. Smith Manufacturing Co., 1000 Series, Size: to match the existing diameter. Bottom outlet to match the existing outlet. Acceptable connection: Speedi-Set Gasket. Utilize the drain manufacturer's specified cast iron underdeck clamp, clamping ring and drain strainer.
- C. Replacement roof drain strainers and clamping rings shall be cast iron, sized to fit the existing roof drain bowl.
- D. Foam backer rod: Closed-cell polyethylene foam, 1-1/2 times the diameter of intended opening.

PART 3 EXECUTION

- V. Closely inspect the existing concrete roof deck for deteriorated conditions or holes. Repair isolated deck damage not exceeding 12-inches x 12-inches with 3/16-inch steel plate.
 - 1. NOTE: Concrete deck repairs shall be bid as a Unit Price Extra.
 - 2. Significant damage that would require removal and replacement of the concrete roof deck shall be negotiated with the Owner prior to removal and replacement.
- W. Repair isolated deck damage not exceeding 6-inches x 6-inches with 18-gauge galvanized flat stock.
 - 1. NOTE: Deck repairs accomplished with 18-gauge galvanized flat stock shall be bid as a Unit Price extra.
- X. Remove debris, scrap and rubbish from the roof areas and building grounds daily.

3.03 INSTALLATION PROCEDURES

- A. General: Comply with manufacturer's instructions, except where more stringent requirements are indicated herein.
- B. Details relating to the installation of the new roof system shall be approved by the selected roofing material manufacturer and the Roof Consultant and installed in such a manner that the manufacturer will furnish the specified warranty for the installation.
- C. Do not begin roofing work until all decks, walls, curbs, nailers, accessories, and underlying substrates are ready and acceptable to have roofing materials installed. Deck surfaces must be clean, smooth, dry and free of moisture prior to beginning roof application.
- D. Schedule and supervise work crews so that the area of roofing begun one day is completely finished before leaving the job site that day. Included are all flashings within each day's work area and adjoining the membrane.
- E. Do not install any roofing materials during rain or other inclement weather. One exception is that temporary work may be installed during such weather to protect the building interior and new materials that are already installed. Remove all temporary work and materials that have been exposed to such weather, then install permanent materials as specified during acceptable weather conditions.
- F. At the end of each day's roofing installation, protect edge of incomplete work, including membrane and insulation. Provide temporary water cut-offs to provide a weather tight seal to both the roof deck and existing roof membrane. Remove temporary water cut-off materials at the beginning of next day's work.
- G. Materials must be stored dry and protected with tarps and on pallets at all times. Wet or damaged materials will be removed from the job site.

3.04 CONCRETE DECK

- A. Install 18-gauge galvanized plates at small holes (less than 6-inches by 6-inches) and/or at isolated areas of deterioration of the concrete roof deck. The plates shall extend 6-inches past the deficient area in each direction. Secure the steel plate to sound concrete with Tapcon fasteners installed 6-inches on-center along the perimeter edge of the steel plate.
- B. Install 3/16-inch thick steel plate over holes and deterioration (less than 12-inches by 12-inches) in the concrete roof deck. The plate shall extend 6-inches past the deficient area in each direction. Secure the steel plate to sound concrete with Tapcon fasteners installed 12-inches on-center along the perimeter edge of the steel plate.

3.05 WOOD NAILERS

- A. Install new wood nailers and plywood as designated on the attached Details. Secure the wood nailers to concrete deck with heavy duty screws spaced 12-inches on center. Secure the wood nailers to existing wood nailers with galvanized 16d nails in two staggered rows spaced 12-inches on center. Secure plywood to wood nailers with galvanized 8d nails spaced 6-inches on center along plywood edges.

- B. Resecure all loose existing wood nailers to provide solid securement for the new roof system and perimeter edge sheet metal. Secure the existing wood nailers with appropriate fasteners.
- C. Install new wood nailers at roof curbs which are not 8-inches above the new finished roof. The wood nailers shall be installed to match the existing opening or inside dimension of the curb. The wood nailers shall be a minimum of 1.5-inches thick and shall be of sufficient width to provide a minimum curb height of 8-inches above the completed roof surface. Secure the new wood nailers with appropriate fasteners.
- D. Install new wood nailers where the existing wood nailers were removed due to deterioration. The new wood nailers shall be secured using the same methods that the originally installed wood nailers were secured and/or in a manner to provide solid securement.

3.06 ROOF DRAIN INSTALLATION

- A. The Roofing Contractor shall hire a licensed plumbing subcontractor to install replacement roof drains as necessary. The Roofing Contractor shall coordinate the roof drain installation with the plumber. Temporary roofing work needed at the roof drain location shall be provided by the Roofing Contractor at no additional cost to the Owner.
 - 1. Install new roof drain assemblies at the deteriorated roof drain locations. Utilize the manufacturer's recommended underdeck clamp to secure the drain bowl to the sump pan.
 - 2. The new roof drain shall be connected to the existing drain pipes in accordance with state and local plumbing codes and the drain manufacturers requirements. Insulate the new roof drain and drain pipe to prevent condensation. Water test the new roof drain to verify that the new roof drain functions properly.
 - 3. Install new cast iron clamping rings and cast iron roof drain strainers at the new replacement roof drain locations.

3.07 INSULATION INSTALLATION

- A. Verify that vapor retarder, flat stock and tapered isocyanurate insulation layers are properly installed and ready to receive new roofing membrane in accordance with Section 07 2100 - Thermal Insulation.

3.08 MEMBRANE INSTALLATION

- A. Roofing membrane system shall be installed following the application requirements of the selected roof membrane material manufacturer 30-year warranty details. The latest printed instructions will govern the application procedure.
- B. Evenly apply adhesives at rate recommended by manufacturer to both the underside of the membrane and the insulation. Apply bonding adhesive uniformly, stopping short of the splice areas along the seams and base tie-ins. Allow the adhesive to flash off until tacky.
- C. Reposition the membrane, free of air pockets and wrinkles. Firmly press the sheet into place without stretching. Broom the surface to improve adhesion immediately after installation.
- D. Overlap edges and ends and seal by manufacturer's recommended dimensions.
- E. Shingle lap joints on sloped substrates in the direction of drainage.
- F. Complete the roof membrane seams with the roof membrane manufacturer's seam tape. Apply the seam tape in accordance with the roof membrane manufacturer's instructions, including seam preparation work, proper seam tape alignment and exposure. Roll the completed seam with a hand roller across and along the seam.
- G. Secure the roof membrane with the roof membrane manufacturer's reinforced perimeter attachment strips. Adhere the reinforced perimeter attachment strips to the insulation and/or wall with bonding adhesive. Fasten the securement strips with the roof membrane manufacturer's approved fasteners. After adhering the roof membrane to the reinforced perimeter attachment strip, roll the splice area with a hand roller across the strip over the length of the splice.
- H. Extend the roof membrane down the vertical face of the perimeter edges to a point 1-inch below

the bottom of the wood nailer(s). Secure the membrane with roofing nails spaced 12-inches on center.

- I. Apply T-joint covers, stripping and appropriate sealant where specified by the selected roof membrane manufacturer on a daily basis.

3.09 FLASHING INSTALLATION

- A. Perimeter edge flashing, wall flashing, round pipes/ vents and roof curbs shall be installed in accordance with the selected material manufacturer's flashing details using the longest pieces practicable. The installed flashing shall be fastened along the top edge 12-inches on-center (maximum). The latest printed flashing instructions must be followed as issued by the material manufacturer.
 1. NOTE: ALL FLASHINGS SHALL BE COMPLETED DAILY AS THE PROJECT PROGRESSES WITH THE INSTALLATION OF THE NEW ROOF SYSTEM.
- B. Install termination bars at the horizontal and vertical ends of the base flashing. Apply a continuous bead of water cut off mastic between the substrate and the flashing at the termination bar locations. The termination bar shall be mechanically fastened (12-inches on-center, maximum) into slotted holes.
- C. Seal roof drains per the manufacturer's recommended details. Install existing or new clamping rings and cast iron drain strainers immediately after placing the membrane. Drain strainers and clamping rings must be securely fastened to the roof drain bowl. Provide new clamping ring and drain strainer where missing at the drain(s) in Area 2.
- D. Install foam backer rod into the roof curb's integral curb caps in Area 1 to retain the top edge of the curb flashing.

3.10 PENETRATION FLASHING INSTALLATION

- A. Flash all round and square penetrations (pipes, vent stacks, conduits, support legs, etc.) passing through the membrane. Factory prefabricated pipe flashing shall be used to flash all pipes where installation is possible. Where factory prefabricated pipe flashing cannot be installed, field fabricated pipe flashing may be used. All flashings and terminations shall be completed in accordance with the membrane manufacturer's printed requirements.
- B. Return the existing round to square bonnet flashing to its original position at the large diameter stack location. Resecure the bonnet flashing using new galvanized bolts and nuts. Reseal the top edge of the flashing to the stack using the specified sealant.

3.11 SHEET METAL INSTALLATION

- A. See Section 07 6200 - Sheet Metal Flashing and Trim for installation of the fascia cap and counterflashing.

3.12 MISCELLANEOUS INSTALLATION

- A. Install new walk pads at the locations shown on the Roof Plan. Secure the walk pads to the membrane in accordance with the walk pad manufacturer's instructions.
- B. Reconnect the conduit to the new counterflashing along Area 4 penthouse wall. Secure the conduit as originally secured with stainless steel clamps and screws.
- C. Return the steps at the roof access door in Area 3 to its original location. Resecure as originally secured.

3.13 PRECAUTIONS

- A. Do not use oil base or plastic roof cement in conjunction with EPDM materials.
- B. Waste products (petroleum, grease, oil and solvents - vegetable or mineral oil and animal fat - direct contact with steam venting) should not be allowed to come in contact with the EPDM roof

membrane system.

- C. Splicing and bonding surface must be dry.
- D. Daily Seal: Care should be exercised to ensure that water does not flow beneath any completed sections of roof by temporarily sealing the loose edge of the membrane when the weather is threatening. The manufacturer's requirements should be followed closely.
- E. An open flame may not be used to dry the roof membrane or to heat the flashing materials.

3.14 FIELD QUALITY CONTROL

- A. The Roofing Contractor shall coordinate inspection services during roof application. Prior to final payment, and as a condition thereof, the Roofing Contractor shall obtain final approval from the Roof Consultant indicating proper compliance with the Contract Documents.
- B. The Roof Consultant shall review and approve all shop drawing submittals.
- C. Notify Roof Consultant whenever roofing work is to be done, in sufficient time to arrange inspections. Provide safe access to roof for monitoring.
- D. Furnish Roof Consultant with all pertinent job information prior to beginning work.
- E. The Roof Consultant may perform any testing required to verify the integrity of the work and confirm that work is in conformance with manufacturer's recommendations.

3.15 CLEANING

- A. Remove adhesives, soil or other markings from finished surfaces.
- B. In areas where finished surfaces are soiled by work of this section, consult manufacturer of surfaces for cleaning advice and comply with their documented instructions.
- C. Repair or replace defaced or damaged finishes caused by work of this section.
- D. The Roofing Contractor will be responsible for cleaning the building interior on a daily basis of any reroofing related debris entering the building as a result of deck repair and reroofing operations.

3.16 PROTECTION

- A. Where traffic must continue over finished roof membrane, protect surfaces using rigid insulation and plywood.
- B. The use of ATVs on installed insulation or roof membrane is not permitted.

END OF SECTION

SECTION 07 6200
SHEET METAL FLASHING AND TRIM

PART 1 GENERAL

1.01 RELATED DOCUMENTS

- A. This Section is part of the entire set of Contract Documents and shall be coordinated with the applicable provision of the other parts.

1.02 SECTION INCLUDES

- A. Shop fabricated counterflashing and flange, sleeve and umbrella flashing.
- B. Premanufactured sheet metal fascia cap.
- C. Sealants for joints within sheet metal fabrications.

1.03 RELATED REQUIREMENTS

- A. Section 075300 - Elastomeric Membrane Roofing.

1.04 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2020.
- B. ASTM B32 - Standard Specification for Solder Metal; 2020.
- C. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021.
- D. ANSI/SPRI ES-1-2003 Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.
- E. SMACNA (ASMM) - Architectural Sheet Metal Manual; 2012.

1.05 SUBMITTALS

- A. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- B. Samples: Submit selection and verification samples for finishes, colors and textures. Color to be selected by the Owner.
- C. Samples: Submit one sample, 12-inches in length, of each type of flashing and counterflashing for verification and acceptance of metal type, finish and profile.

1.06 QUALITY ASSURANCE

- A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise indicated.
- B. Fabricator and Installer Qualifications: Company specializing in sheet metal work with 5 years of documented experience. Engage an experienced installer who has completed sheet metal flashing and trim work similar in material, design and extent to that indicated for this Project and with a record of successful in-service performance.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.
- C. Do not expose to direct sunlight or extreme heat trim material with factory applied strippable film.

PART 2 PRODUCTS

2.01 SHEET MATERIALS

- A. Galvanized Steel: ASTM A653/A653M, with G90/Z275 zinc coating; minimum 24 gauge, 0.0239 inch (0.61 mm) thick base metal.
- B. Mill Finish Aluminum: ASTM B209, 0.032-inch thick sheets.
- C. Premanufactured Snap-On Fascia Cap: NOTE: Shop fabricated fascia cap will not be permitted on this project. Meet ANSI/SPRI ES-1-2003 Wind Design Standard to a design pressure of 275 lbs./ft². Rigid retainer anchor bar: 6063-T6 alloy aluminum (12-foot long maximum) with pre-punched slotted holes. Snap-on fascia cap: 0.040" mill finish aluminum smooth (12-foot long maximum). Use premanufactured corners only.
 - 1. Acceptable Manufacturer's:
 - a. Carlisle, SecurEdge 3000 Roof Edge Fascia System
 - b. Firestone, UNA-Edge AnchorGard Platinum Fascia System
 - c. Johns Manville, Presto-Tite Fascia System
 - d. Metal-Era, Anchor-Tite Fascia System
 - e. Pac-Clad, Snap Edge Fascia System
- D. Accessories
 - 1. Fasteners: Stainless steel as recommended by the manufacturer.
 - 2. Gasketed washers: Soft neoprene washers.
 - 3. Elastomeric Sealant: High performance, one component polyurethane-base, non-sag elastomeric sealant as manufactured by one of the following manufacturers or approved equivalent:
 - a. Sika Corporation, Sikaflex - 1a
 - b. Tremco, Vulkem 116
- E. Fabrication, General
 - 1. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal and other characteristics of the item indicated.
 - 2. 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.
 - 3. Form material with watertight end joints and seams.
 - 4. Fabricate vertical faces with bottom edge hemmed 1/2-inch and bent outward to form adrip edge unless specified otherwise.
 - 5. Form exposed sheet metal work, shop fabricated or field fabricated, that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated.
 - 6. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
 - 7. Conceal fasteners and expansion provision where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.
 - 8. Fabricate continuous cleats from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
 - a. Size: One gauge heavier than thickness of metal being secured.
 - 9. Corners (counterflashing only): corners must be formed, mitered, lapped, notched, sealed or soldered as necessary to provide a continuous system that is not more susceptible to leaks than straight sections.

F. Fabrication, Sheet Metal

1. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.
2. Counterflashing: Fabricate from the following material:
 - a. Mill Finish Aluminum: ASTM B209, 0.032-inch thick, 12-feet long.
 - b. Fabricate the reglet mounted counterflashing in accordance with SMACNA Figure 4-4 B. Fabricate the counterflashing with a hemmed drip edge along the bottom edge, a minimum face of 4-inches and bent to return into the reglet 1-1/2-inches.
 - c. Fabricate the receiver mounted counterflashing in accordance with SMACNA Figure 4-4D. Fabricate the counterflashing with a hemmed drip edge along the bottom edge and a minimum face of 4-inches. The top edge to receive into the existing receiver 1-1/5-inches.
 - d. Fabricate the surface mounted counterflashing (with a caulk lip) in accordance with SMACNA Figure 4-6. Fabricate the counterflashing with a hemmed drip edge along the bottom edge and a 5-inch minimum face as shown on the Details. Fabricate the top edge with a hem bent at 45 degrees to receive the specified sealant.
3. Stack Flashing: Fabricate from the following material:
 - a. Galvanized Steel: 0.025 inch (24 gauge) thick.
 - b. Fabricate flange, sleeve and umbrellas in accordance with SMACNA Figure 8-11A. Fabricate the the flashing with 4-inch wide flanges. Fabricate the sleeve and flange with continuous soldered joints. Fabricate with a sleeve height of 8-inches minimum. Fabricate the umbrella to lap the top of the sleeve 4-inches minimum.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify roofing termination and base flashings are in place, sealed, and secure.

3.02 INSTALLATION

- A. Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions and SMACNA's "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.
- B. Expansion Provisions: Provide for thermal expansion of exposed sheet metal work. Space movement joints at maximum of 12 feet with joints located near the building corners as required.
- C. Prefabricated Sheet Metal Fascia Cap
 1. Verify EPDM membrane is fully adhered to perimeter edge, extends at least one-inch below the bottom edge of wood nailers on the outside face and is fastened 12-inches on center with roofing nails.
 2. Install the specified prefabricated sheet metal fascia cap system along the perimeter edges. The installation shall be in accordance with the manufacturer's requirements. Apply non-curing sealant and install fasteners in the anchor bar as required.
 3. Install the prefinished fascia cap onto the anchor bar and lap the cover sections as required.
 4. Use the manufacturer's hardware accessories only.
- D. Counterflashing
 1. Reglet mounted: Install counterflashing into a sawcut reglet in the concrete block walls.

The counterflashing must cover the top edge of the base flashing a minimum of 3-inches. Insert the top edge of the counterflashing a minimum of 1-1/2-inches into the wall and secure with lead wedges spaced 18-inches on center. Notch and lap the endjoints in the counterflashing 4-inches. Seam and seal the outside corners. Fill the reglet with the specified elastomeric sealant and tool the joint to promote adhesion and water shedding capabilities.

2. Receiver Mounted: Install counterflashing into the existing receivers. Provide 4-inch wide laps between counterflashing sections. Secure the counterflashing to the receivers with stainless steel pop rivets spaced 18-inches on center.
 3. Surface Mounted Counterflashing: Install counterflashing to protect the top edge of the flashing on concrete walls, piers and columns as shown in the RTA Details and SMACNA Figure 4-6. Notch and lap the endjoints and inside corners. Seam and seal the outside corners. Secure the counterflashing to the concrete with masonry anchors spaced 12-inches on center. Apply the specified sealant in the caulk lip and tool the sealant to promote adhesion and watershedding capabilities.
- E. Stack Flashing
1. Provide flange, sleeve and umbrella flashing at round stacks and roof penetrations whenever possible. Field seam and solder the joints in the flange and sleeve.
 2. Secure the flange to the roof deck with screws. Neatly field wrap the sheet metal flashing in accordance with the selected membrane manufacturer's requirements.
 3. Install an umbrella with 1/4-inch minimum clearance from the top of the sleeve. Tightly secure the umbrella in place with a stainless steel drawbands. Seal the top of the umbrella to the penetration with the specified caulk.

END OF SECTION