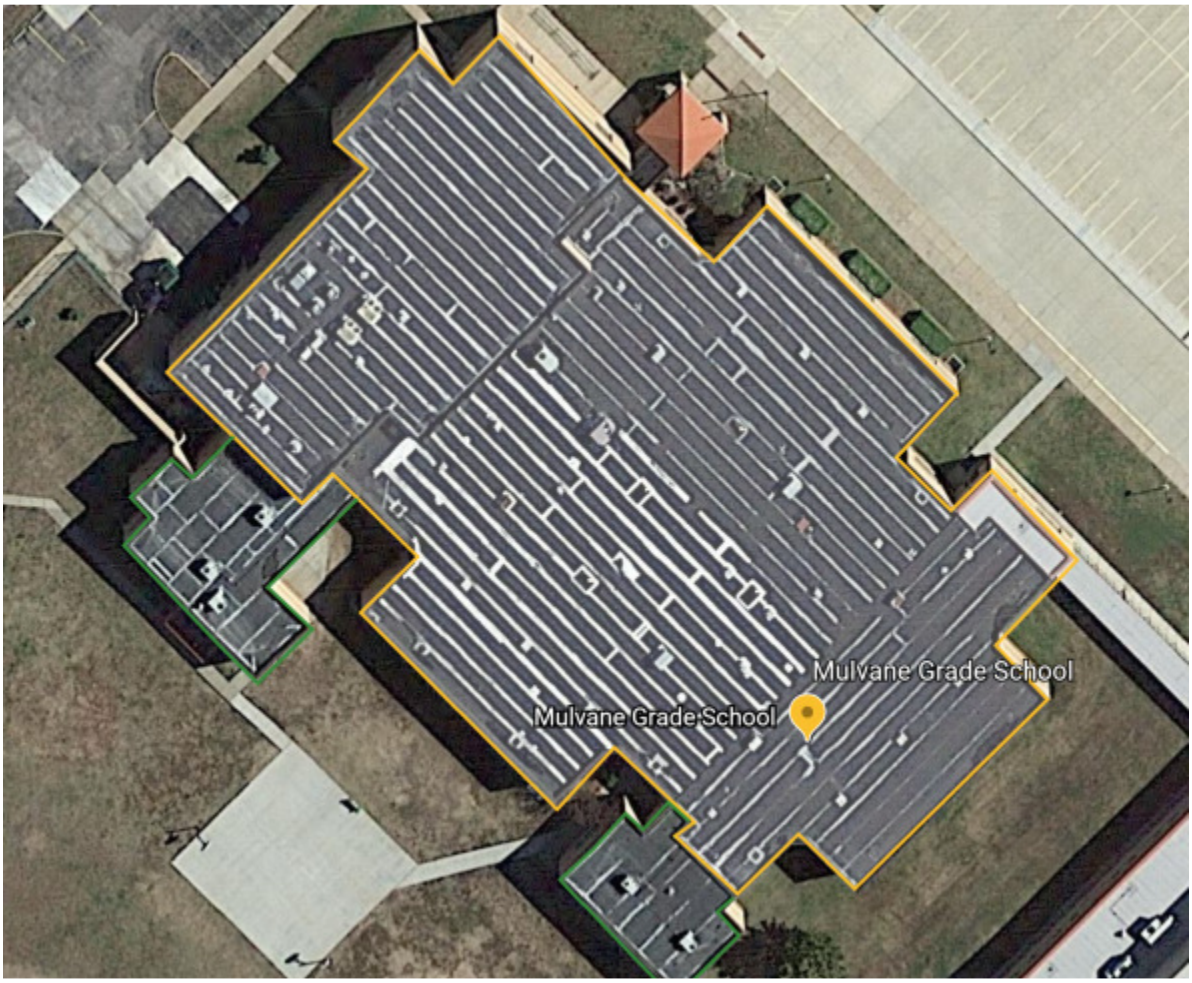
MULVANE GRADE SCHOOL
ROOF REPLACEMENT
SECTIONS OUTLINED IN YELLOW



SECTION 00 10 00 – INVITATION TO BID

PART 1 – GENERAL

1.1.1 A. OWNER:

USD # 263 Mulvane
Attn: Brad Canfield
628 E. Mulvane Street
Mulvane, KS 67110

B. OWNER REPRESENTATIVE:
Mr. Brad Canfield
(316) 777-1102

1.2 PROJECT LOCATION
MULVANE GRADE SCHOOL
411 LOUIS DRIVE
MULVANE, KS 67110

1.3 BIDDERS

A. Your firm is invited to submit a proposal for the above referenced roofing project.
B. A mandatory Pre-bid meeting will be held on FRIDAY APRIL 16,2021 at 10:30 AM. At Mulvane Grade School, 411 Louis Drive, Mulvane, KS.
C. SEALED BIDS ARE DUE ON APRIL 23, 2021 AT 2:00 P.M. AND SHALL BE SUBMITTED TO: USD# 263, 628 E. MULVANE STREET, MULVANE,KS 67110.
D. All bids are to be supplied on the Bid Form provided with project specifications. Late submissions will not be accepted.
E. For all questions regarding the bidding requirements and specifications please send in e - mail form to Brad Canfield at bcanfield@usd263.org and copy Chris Swanson with Luna & Associates at cswanson@lunaassoc.com.

END OF SECTION 00 10 00

SECTION 00 20 00 – INSTRUCTIONS TO BIDDERS3

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Divisions 01 Specification Sections, apply to this section.

1.2 SUMMARY

A. This Section includes the following;
   1. Bidding Documents
   2. Qualifications of Bidders
   3. Bidders Representation
   4. Bidding Procedures
   5. Acceptance and Rejection of Bids

1.3 BIDDING DOCUMENTS

A. Bidding Documents include the Building Requirements and the proposed Contract Documents.

   1. The bidding requirements consist of the following;
      a. Invitation to Bid
      b. Instructions to Bidders
      c. Bid Form
      d. Supplementary Instructions and Conditions
   2. The Contract Documents consist of the following:
      a. Form of Agreement between the Owner and Contractor
      b. Conditions of the Contract
      c. Drawings, Specifications, and all Addenda issued prior to execution of the Contract.

1.4 QUALIFICATIONS OF BIDDERS

A. Bidder shall be approved and authorized as a Carlisle Approved Applicator and able to provide the specified Carlisle 20 year “Golden Seal Total System Warranty” .

B. Bidder shall have sufficient resources including capital, tools, equipment, materials and skilled workforce employed by the contractor, to perform the specified work immediately and complete the project quickly and skillfully.

C. Bidder must have 5 years of verifiable experience in installing the roof system specified and must have performed work similar in scope to the work specified in this project.

D. The Owner may make such investigation as it deems necessary to determine the ability of the bidder to perform the work, and the bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. The Owner reserves the right to reject any and all bids if the evidence submitted by, or investigation of , such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations

of the plans or specifications and to complete the work contemplated therein. Conditional bids shall not be accepted.

1.5 BIDDER'S REPRESENTATION

A. By submission of bid, the contractor represents that:
   1. They understand and can meet the Owner's schedule of roof replacement
   2. They have read and understand the Bidding and Contract documents and that they are fully qualified to bid the project and act as the contractor for the project.
   3. They have attended the pre-bid meeting and fully understand the scope and extent of project.
   4. The bid is in compliance with these bidding documents.

1.6 BIDDING PROCEDURES

A. All bids shall be submitted on the forms included with the Bidding documents with all blanks on the forms legibly executed. No bid may be withdrawn within sixty (60) days from and after the date set for opening bids.
B. Bids shall be submitted to USD# 263, 628 E. Mulvane Street, Mulvane, KS 67110 Attn: Brad Canfield. Bids must be delivered no later than 2:00 p.m. on April 23, 2021.

1.7 ACCEPTANCE AND REJECTION OF BIDS:

Owner reserves the right to reject any or all bids and to waive any informality or irregularity and to accept the bid which is in the Owner's best interest.

End of SECTION 00 20 00

SECTION 00 41 00 -BID FORM

1.1 TO: OWNER

USD # 263 Mulvane School District
Attn: Brad Canfield
628 E. Mulvane Street
Mulvane, KS 67110

1.2 FOR:
Mulvane Grade School Roof Replacement Project
Sections:
411 Louis Drive
Mulvane, KS 67110

1.3 DATE:
A. Date Submitted:_____

1.4 SUBMITTED BY:

COMPANY NAME _____

ADDRESS: _____

CITY, STATE, ZIP: _____

PHONE: _____

EMAIL:_____

1.4 BID

A. In Conformity with the plans and specifications for the project listed above and having examined the project site and all matters referred to in the Instructions to Bidders and Bidding Documents, we, the undersigned, hereby propose to enter into Contract to Perform the Work for the Sum of:

LUMP SUM BASE BID –

Remove existing roof system and flashings down to the metal deck and properly dispose. Mechanically fasten two layers of 2.6" Polyisocyanurate (20 psi). Adhere a ½" Securshield HD coverboard in Flexible Fast adhesive. Install Carlisle 115 Mil TPO Fleeceback with APEEL protective film in Flexible Fast adhesive as specified in the Project Manual and per manufacturer requirements in order to obtain a 20 year, 90 mph Golden Seal Warranty with 3" hail warranty and 20 man hour Puncture Warranty. Bid includes all applicable permits.

BASE BID AMOUNT: $_____

UNIT PRICES: Unit pricing shall be used in determining additions to or deductions from the lump sum bid contract amount in the event of changes due to unforeseen conditions in the work, proposals by the Contractor, or directives of the Owner.

1.

Note: Unreasonable unit price bids can be cause for rejection of the entire bid. The quantity of all unit price items must be properly documented during the course of the project with digital pictures and the exact location / quantity of the required work must be shown on a roof plan that is submitted to the Owner on a weekly basis.

UNIT PRICE #1 – METAL DECK REPLACEMENT:

Installed price for removal of existing metal decking and replacement with new decking to match existing type, thickness and configuration. All new metal decking shall be attached utilizing fasteners as tested and approved by FM Global in accordance with FM Global Loss Prevention Data Sheet I-29.

$_____per sq. ft.

UNIT PRICE #2 – REPLACEMENT OF DETERIORATED WOOD BLOCKING

Installed price per board foot for new wood blocking to replace deteriorated, as required.

$_____/per board foot

Addendums received:_____

Signed by:_____ Title:_____

Contractor Name and address:_____

SECTION 00 80 00 – SUPPLEMENTAL CONDITIONS

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. This project is a roof replacement project at an existing building which will be open to the public. Owner will occupy the building and site during roofing operations. It is essential that the contractor give special attention and priority to all matters concerning project safety, containment of dust and debris, exhaust of carbon monoxide, and protection of the building from water infiltration.

1.3 SPECIAL CONDITIONS AND PROCEDURES

A. Contractor shall be responsible for verifying all field dimensions, existing construction and conditions which may impact their bid.

B. All flashing heights shall be a minimum of 8 inches on curbs and walls. Low curb heights shall require removing the equipment and installing additional nailers to achieve minimum flashing heights per manufacturer's requirements.

C. All abandoned and obsolete equipment, curbs, supports, pipes, conduits and other penetrations shall be removed and infill decking and roofing material installed as part of the base bid.

D. All gas lines, mechanical and electrical disconnects and reconnects as required to raise curbs, flash units, and complete the roofing installation shall be the contractor's responsibility.

E. Coordinate daily activities with owner's representative to ensure uninterrupted operations of all tenants.

1.4 SPECIAL RESTRICTIONS AND USE REQUIREMENTS

A. Access to the site and roof shall not restrict or interfere with deliveries and emergency vehicles. In all cases public safety is paramount. No hoisting, tear off, edge metal removal, or any other activity shall be conducted that may be directly above, beside or directed at the public.

B. Access to the roof shall be by external means only except when height conditions do not allow safe access. Access to the interior of the building shall be limited to times when roofing operations require protection and or safety monitoring of the interior.

C. All work shall be performed during normal work hours unless otherwise required for project safety. In all cases work times shall be in compliance with local codes.

1.5 CONTRACTOR DUTIES

A. Contractor shall provide all labor, materials, transportation, equipment, supervision, permits, and all other items and services necessary and reasonably incidental to the performance and proper execution of all of the Work required by the Contract Documents, in compliance with Applicable Laws.

B. Contractor shall report to owner, prior to submission of Quotation, any discrepancies, inconsistencies, conflicts, errors, or omissions found in these Specifications.

C. Contractor shall identify a skilled field foreman for the project prior to the start of the project who shall be fully capable of effectively communicating with project management.

D. Contractor shall provide and maintain effective, after-hours contact lists and make available to all at the Pre-Installation Conference. Contact list may be used in the event of weather problems or other emergencies related to the roofing project. Contractor shall respond to after-hours emergency requests from the Owner, such that personnel are on the project site in one hour or less from time request call is placed. Contractor shall be responsible for all water removal, clean-up, and the replacement or restoration of any and all building components

damaged as the result of in progress roofing operations and failures of same, specifically including but not limited to tie-offs.

E. Contractors failure to effectively respond to emergency situations will result in the hiring of others to perform the work. Costs of all such work required, whether by the owner's staff or by outside contractors shall be borne by the project roofing contractor.

F. Contractor is responsible for any fasteners or other components used in the course of the work that in any way damage other building components. Fasteners penetrating piping, electrical and special systems conduits, electrical junction boxes, etc., are specifically included in this range of responsibility. All costs of restoring or replacing such components damaged by contractor's operations shall be borne solely by the roofing contractor.

G. Air-Conditioning units and other equipment shall be moved as required to install roofing material complete and in accordance with plans and specs. When units and equipment are to be moved, they shall be carefully disconnected and moved to a protected area so as not to damage any part or component thereof, and shall be reconnected and restored to prior work condition. A mechanical and/or electrical company licensed to perform such work shall perform all disconnection and reconnection. Dish Antennas shall be verified with owner as to need to keep in operation during this work.

1.6 PROTECTION OF WORK AND PROPERTY

A. Contractor shall continuously maintain adequate protection of all the work from damage or loss and shall protect the owner, it's employees and its or their property from personal injury, property damage or loss arising out of the execution of the Work.

B. Contractor shall comply with requirements of applicable laws for erecting barricades, with warning signs to inform project personnel and the public of possible hazards. Contractor shall also provide, in conformance with OSHA regulations and other Laws, all barricades and warning lines required to identify roof openings and other fall hazards.

C. Contractor shall not overload roof structure with debris or new material.

D. Contractor shall provide portable fire extinguishers and make them accessible at all times, per OSHA requirements.

E. Contractor is required to protect the building from the possibility of exhaust fumes, dust, dirt or other latent material created, as a result of construction operation, from entering the air intake system. These coverings shall be removed immediately at the completion of these operations throughout the project.

F. Contractor is responsible for protection of the grounds and existing plant life from damage due to operations.

1.7 STORAGE OF MATERIALS

A. Contractor shall confine the storage of its materials on the project site to those areas approved by Owner. Contractor shall not unnecessarily encumber the premises or overload any portion of any of the buildings with materials to a greater extent than permissible under the structural design load.

END OF SECTION 00 80 0

SECTION 01 00 00 – GENERAL REQUIREMENTS AND CONDITIONS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the following:
   1. Taxes
   2. Insurance
   3. Bonds
   4. Indemnification

1.3 DEFINITION OF CONTRACT DOCUMENTS

A. The Contract Documents shall consist of the specific written agreement between the Owner and the contractor, these General Conditions, the Drawings and Specifications, any other documents enumerated in the Agreement, any amendments to any of the foregoing made prior to the execution of the Agreement (the Addenda) and all Change Orders issued after the execution of the Agreement.

1.4 TAXES

A. This project is Sales Tax Exempt.

1.5 INSURANCE

A. General
   1. Unless otherwise provided, Owner shall be responsible for purchasing and maintaining property insurance, also known as Builders Risk Insurance coverage with limits equal to the value of the completed work for the risks of fire and extended coverage, vandalism, and malicious mischief and all risk coverage. The policy shall be written in the name of the owner and extend to the Contractor.
   2. Contractor shall purchase and maintain insurance to protect Contractor and Owner against all hazards herein enumerated throughout the duration of the contract. Insurance shall by issued by companies listed in the current A.M. Best Company's Key Rating Guide as having a minimum rating of A-VII and be accepted by the insurance commissioner of state of work. All policies shall be in form and amounts and with companies satisfactory to the Owner. See minimum coverages attached.

1.6 PAYMENT AND PERFORMANCE BONDS

A. Bonds shall **not** be required for this project.

1.7 INDEMNIFICATION

A. To the fullest extent permitted by law, the Contractor agrees to protect, defend, hold harmless and indemnify Owner and its affiliates, partners, employees, directors, officers, shareholders, and the successors and assigns of each from and against all claims, actions, liabilities, damages, losses, costs and expenses, including attorney's fees, arising out of or resulting from the performance of Services at the Property by Contractor or Contractor's subcontractors, agents or employees.

END OF SECTION 01 00 00

ECTION 01 11 00 – SUMMARY OF WORK PART

1 – GENERAL

1.1 SUMMARY

A. This section includes the following:
   1. Work covered by the Contract Documents
   2. Work under the Contract
   3. Use of Premises
   4. Owner's Occupancy
   5. Work Restrictions

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Location:
   Mulvane Grade School
   411 Louis Drive
   Mulvane, KS 67110

B. Owner:
   USD # 263 Mulvane School District
   628 E. Mulvane Street
   Mulvane, KS 67110

1.3 SUMMARY OF WORK –

1.4 Summary of the work is as follows:

Bidder agrees to furnish all labor, materials, and equipment, as to perform all work required, including the following items for a lump sum price:

a. Prior to the start of the project the selected contractor shall be responsible for providing submittals to include product data for membrane, membrane accessories, insulation, fasteners, plates, adhesives, and sealants to be utilized on the project. Submittals shall also include a Notification of Award submitted to the proposed roof system manufacturer and acceptance of the NOA, anticipated Work Schedule and Schedule of Values.
b. Prior to installation the selected contractor shall be responsible for obtaining all permits as per requirements of the local jurisdiction.
c. The selected contractor shall provide and maintain all necessary barricading for staging, dumpsters, pedestrian and traffic control as required.
d. Prior to loading material and commencement of roofing operations the selected contractor shall be required to inspect roof membrane surface for any areas of roof deck sagging or

possible deterioration. Inspect underside of roof deck and document any areas of roof deck deterioration or damage observed or suspected and notify owner and include a roof plan identifying locations and approximate square footage of suspected areas of damaged or deteriorated decking.

e. Prior to the start of the project, the selected contractor shall inspect the underside of the roof deck for conduits and other electrical items that are against the bottom of the roof deck or that run in the flutes of the steel deck and report any observed conditions to Denise Shibley or Chris Swanson. It shall be the selected contractor's responsibility to identify and avoid locating fasteners where any potential for penetrating conduits, etc. exists. The selected contractor shall be responsible for all costs associated with required repairs to the conduits or other electrical items that are damaged by fasteners.

f. Remove and properly dispose of any abandoned penetrations. Repair opening in roof deck with new minimum 16 ga. steel plate or fill in with new decking to match existing decking, as needed.

g. Remove and properly dispose of the existing metal coping, perimeter edging, scupper sleeve, conductor and downspout, wall flashings, curb flashings, flashings at penetrations, roofing and insulation down to decking. Remove all loose residual debris from deck flutes and decking.

h. Remove and replace areas of existing metal roof deck that are structurally impaired or severely corroded with new decking to match the existing type, style and gauge mechanically attached to the steel bar joist utilizing fasteners as tested and approved by FM Global and in accordance with FM Global Loss Prevention Data Sheet 1-29 for Unit Price as outlined on Bid Form.

i. Remove and replace any damaged or deteriorated wood blocking as required with new kiln dried southern pine or Douglas fir to match dimensions of the existing fastened in accordance with FM Global Loss Prevention Data Sheet I-49 for Unit Price as outlined on Bid Form

j. Install two layers of new Carlisle polyisocyanurate insulation as required to meet an average R-value of R-30, mechanically attached to meet or exceed the proposed roof system manufacturer's installation requirements and in accordance with all local, state and national building code requirements to provide the required wind uplift rating for this geographic location.

k. Install new Carlisle Polyisocyanurate crickets with ½" per ft. slope between drains or scuppers and at high sides of units.

l. Install a Carlisle ½" HD ISO Coverboard set in Flexible Fast adhesive.

m. Install new Carlisle 115 Mil Reinforced TPO Fleeceback membrane adhered at 4" o.c. to meet or exceed the proposed roof system manufacturer's installation requirements and in accordance with all local, state and national building code requirements to provide the required wind uplift rating per ASCE 7 calculations.

n. The following roof system manufacturers have been approved by the owner:

Carlisle SynTec Systems

o. Install new 60 Mil TPO membrane flashing or fleeceback membrane at all walls, curbs and roof penetrations in accordance with the proposed roof system manufacturer's standard detailing requirements.

p. Install new Carlisle Securedge 200 Fascia at metal edge locations, pre-finished 24 gauge Kynar "Galvalume" or G-90 galvanized steel, ANSI/SPRI ES-1 tested perimeter edging to replace existing metal edge detail, as provided and warranted by the proposed roof system manufacturer to meet or exceed ASCE 7-10 requirements for Risk Category II structures in this geographic location. Color Selected by Owner from manufacturer's standard color

chart.

q. At parapet walls the new 60 Mil TPO flashing membrane shall extend up and over the parapets and extend down past the face of the wood blocking a minimum of 1 inch onto the exterior.

r. Install new Carlisle SecurEdge 200 coping, Kynar, pre-finished 24 gauge, 'Galvalume' or G-90 galvanized steel , as provided and warranted by the proposed roof system manufacturer to meet or exceed ASCE 7-10 requirements for Risk Category II structures in this geographic location. Color selected by Owner from manufacturer's standard color chart.

s. Install new pre-finished 24 gauge "Galvalume" or G-90 galvanized steel spill out scupper dimensioned to fit the existing opening and flashed in accordance with the proposed roof system manufacturer's standard detailing requirements. Install new 24 gauge 'Galvalume' or G-90 galvanized steel conductor and downspout dimensioned in accordance with International Plumbing Code requirements. Install overflow drainage tabs in the conductor.

t. Install new pre-finished 24 gauge metal edge.

u. Install manufacturer's walk pads at roof access and around all motorized equipment as required by the manufacturer.

v. Remove and replace all wood equipment supports with new minimum 4" x 4" treated wood blocking or sized to match existing with new slip sheet protective membrane under blocking in accordance with the manufacturer's standard detailing requirements.

w. Raise any RTU unit necessary in order to obtain proper flashing height per manufacturer's requirements.

x. Provide contractor's Two (2) Year watertight warranty/ guarantee.

y. Provide Carlisle "Golden Seal Total System 20 year Warranty", with standard 90 mph wind speed and 3" hail warranty with 20 man hour Puncture warranty.

z. Price to include the APEEL PROTECTIVE FILM.

1.5 USE OF PREMISES

A. General: Contractor shall have limited use of premises for construction operations.

B. Limit use of premises to areas within the Contract limits indicated. Do not disturb portions of

Project Site beyond areas in which the Work is indicated. Allow for Owner occupancy of Project Site and use by the public.

C. Schedule deliveries to minimize use of driveways and entrances.
D. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on site.
E. Provide not less than 48 hours notice to owner of activities that will effect Owner's operations.

1.6 WORK RESTRICTIONS

A. Do not interrupt utilities serving facilities occupied by the owner or others unless permitted under the following conditions.
   1. Notify owner not less than 2 days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Owners written permission.
   3. All phone, internet and cable equipment is to be disconnected, reconnected and calibrated by service providers. Contractor is responsible for coordinating roofing activities with service providers.

END OFSECTION 01 10 00

SECTION 01 22 00 – UNIT PRICES

PART 1 – GENERAL

1.1 SUMMARY

This section includes administrative and procedural requirements for unit prices.

1.2 Procedures

A. Unit prices include all necessary material, plus cost of delivery, installation, Insurance, applicable taxes, overhead and profit.

B. List of Unit Prices: A list of unit prices is included in part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 LIST OF UNIT PRICES:

UNIT PRICE #1 – METAL DECK REPLACEMENT:

Installed price for removal of existing metal decking and replacement with new decking to match existing type, thickness and configuration. All new metal decking shall be attached utilizing fasteners as tested and approved by FM Global in accordance with FM Global Loss Prevention Data Sheet I-29.

UNIT PRICE #2 – REPLACE DETERIORATED WOOD BLOCKING:

Installed price per board foot for new wood blocking to replace deteriorated, as required.

SECTION 01 26 00 - CONTRACT MODIFICATION

PROCEDURES

SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.3 MINOR CHANGES IN THE WORK

A. Owner/Owner Representative will issue in writing supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.4 PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: Owner/Owner Representative will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal Requests issued by Owner/Owner Representative are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
2. Within 3 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
c. Include costs of labor and supervision directly attributable to the change.
d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.

B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the

Contract, Contractor may propose changes by submitting a request for a change to Owner/Owner Representative.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Owner/Owner Representative will issue a Change Order for signatures of Owner and Contractor.

B. Documentation: Maintain detailed records of work required by the Change Directive including photographic documentation of all existing and finished conditions.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 26 00

SECTION 01 29 00 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Sections include the following:

1. Division 01 Section "Unit Prices" for administrative requirements governing the use of unit prices.
2. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
3. Division 01 Section "Photographic Documentation" for administrative requirements governing documentation of unit prices and change orders.

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. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with Continuation Sheets.
b. Submittals Schedule.
c. Contractor's Construction Schedule.

2. Submit the Schedule of Values to Owner/Owner Representative at earliest possible date but no later than seven (7) days before the date scheduled for submittal of initial Applications for Payment.

B. Format and Content: Use the 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. Contractor's name and address.
   c. Date of submittal.

2. Arrange schedule of values consistent with format of AIA DocumentG703.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Do not round amounts; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
6. 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.
7. Allowances: Provide a separate line item in the Schedule of Values for each allowance, if applicable. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by Owner and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Application for Payment Forms: Use AIA Document G702 and AIA Document G703 as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Owner 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.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

E. 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. Materials previously stored and included in previous Applications for Payment.
    b. Work completed for this Application utilizing previously stored materials.
    c. Additional materials stored with this Application.
    d. Total materials remaining stored, including materials with this Application.

F. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Owner by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Submit original copies of each Application for Payment to Owner.
2. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

G. 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.
5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

H. 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. Schedule of unit prices.

6. Submittal schedule (preliminary if not final).
7. List of Contractor's staff assignments.
8. List of Contractor's principal Owners.
9. Copies of building permits.
10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
11. Initial progress report.
12. Report of preconstruction conference.

I. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 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 Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.

J. Final Payment Application: 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 taxes, 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."

K. Retainage:

1. Upon project completion and final inspection, and acceptances by material manufacturer, and Owner, Owner shall pay balance of contract amount, less 10% retainage pending receipt of warranty document.
2. Final payment of retainage amount shall be paid by Owner upon receipt and acceptance of warranty document.

L. Photographic Documentation:

1. Contractor shall provide ample digital photographs to document any unit price items or change orders required during this project. Lack of photographic documentation may result in denial of payment requests under the unit price schedule or any change orders.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not

Used)

END OF SECTION 01 29 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

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

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 surfaces to original conditions after installation of other Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. 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.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related 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. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Exterior curtain-wall construction.
4. Equipment supports.
5. Piping, ductwork, vessels, and equipment.
6. Noise- and vibration-control elements and systems.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Owner's opinion, reduce the building's

aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

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

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. 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.

B. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, all work shall be performed by licensed professional for type of work required. Bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut 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. 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 as small as possible, neatly to 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.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
3. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials. Clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 017329

SECTION 01 77 00 - CLOSEOUT PROCEDURES PART 1 -

GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
2. Division 01 Section "Photographic Documentation" for submitting Final Completion construction photographs and negatives.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
3. Prepare and submit Final Completion construction photographs documenting any changes to the contract, and similar final record information.
4. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
5. Complete final cleaning requirements, including touchup painting.
6. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual

defects.

B. Inspection:

1. Submit a written request for final inspection by manufacturer for final acceptance and issuance of warranty document.

1.4 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."

1.5 WARRANTIES

A. Submit properly executed warranties within fifteen (15) days of completion of Work.

B. Upon project completion and final inspection, and acceptances by Owner, and material manufacturer, Contractor shall provide a standard 2-year contractor supplied labor and material warranty against leaks and defects in material and workmanship.

C. Organize warranty documents into an orderly sequence and include manufacturer's instructions to Owner on maintenance and emergency repair.

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: Provide 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 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. Clean construction debris, stains or markings from 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.
    f. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
    g. Sweep construction debris from concrete floors broom clean in unoccupied spaces.
    h. Vacuum carpet and similar soft surfaces, removing construction debris and excess nap; shampoo if visible soil or stains remain.
    i. Clean construction markings and stains from transparent materials, including mirrors and glass in doors and windows. Replace chipped or broken glass damaged as a result of the Work.
    j. Remove labels that are not permanent.
    k. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    l. Leave Project clean of construction debris and ready for occupancy.

C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

SECTION 06 10 53 - MISCELLANEOUS 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.

1.2 SUMMARY

A. This Section includes the following:

1. Rooftop equipment bases and support curbs.
2. Wood blocking and nailers.

B. Related Sections include the following:

1. Divisions 02 through 07 Sections for specific carpentry requirements for the Work in those Sections.

1.3 DEFINITIONS

A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. NHLA: National Hardwood Lumber Association.
3. NLGA: National Lumber Grades Authority.
4. SPIB: The Southern Pine Inspection Bureau.
5. WCLIB: West Coast Lumber Inspection Bureau.
6. WWPA: Western Wood Products Association.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, treatments and dimensions and include construction and application details.

1.5 QUALITY ASSURANCE

A. Forest Certification: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC 1.2, "Principles and Criteria":

1. Dimension lumber framing.
2. Miscellaneous lumber.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers between each bundle to provide air circulation. 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.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA C2.

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 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 all miscellaneous carpentry which will remain exposed to weather, unless otherwise indicated.

1. Treat all wood sills, sleepers, blocking, and similar concealed members in contact with masonry or concrete.

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.
4. Cants.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content 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.
6. Western woods; WCLIB orWWPA.
7. Northern species; NLGA.
8. Eastern softwoods; NeLMA.

C. For exposed 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 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. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1.

G. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568M, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Metal Framing Anchors: Install metal framing to comply with manufacturer's written instructions.

D. Do not splice structural members between supports, unless otherwise indicated.

E. Provide blocking, framing, and spacing as indicated and as required.

F. 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.

G. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with FM Global Loss Prevention Data Sheet 1-49.

H. Use common wire 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; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD 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 screws, bolts and nuts flush with surfaces, unless otherwise indicated.

END OF SECTION 061053

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.

1.2 SUMMARY

A. Section Includes:

1. Roof tear-off.
2. Removal of base flashings.
3. Removal of sheet metal flashing and trim.

B. Related Sections:

1. Division 01 Section "Summary" for summary of work.
2. Division 01 Section "Photographic Documentation" for photographs taken before reroofing preparation and for photographic documentation required for adjusting the Contract Sum according to unit prices included in the Contract Documents.
3. Division 01 Section "Cutting and Patching" for cutting and patching procedures for reroofing preparation.
4. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers, cants, curbs, and blocking.
5. Division 07 Section " Fleeceback Thermoplastic Polyolefin Roofing" (TPO) for roofing membrane system and accessories.
6. Division 07 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counter flashings.

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: r o o f i n g, roof insulation, surfacing, and components and accessories between deck and roofing membrane.

C. Roof Tear-Off: Removal of existing membrane roofing system down to metal deck.

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 INFORMATIONAL SUBMITTALS

A. Photographs or Videotape: 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.

1.6 QUALITY ASSURANCE

A. Installer shall be qualified to provide the specified roof system and able to provide manufacturer's twenty-year warranty and two year contractor's warranty.

B.

1.7 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 will be maintained by Owner as far as practical.

E. Limit construction loads on roof to rooftop equipment wheel loads and for uniformly distributed loads.

F. Weather Limitations: Proceed with reroofing preparation only when existing and forecast weather conditions permit Work to proceed without water entering existing roofing system or building.

G. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Owner. Hazardous materials will be removed by Owner under a separate contract.

PART 2 - PRODUCTS

2.1 INFILL MATERIALS

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

B. Steel deck materials:

1. Steel deck replacement materials shall be of same gauge, type, profile as existing and shall conform to all structural requirements for type of deck used.

2.2 ROOF SCUPPERS

A. Replacement components for existing roof scuppers that will remain:
Install new scupper inserts as per manufacturer's requirements and to prevent ponding at scuppers.

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.

PART 3 - EXECUTION

3.1 PREPARATION

A. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

B. Maintain roof scuppers or drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof scuppers and conductors. Use roof- scupper plugs specifically designed for this purpose. Remove plugs at end of each workday, when no work is taking place, or when rain is forecast.

1. If roof scuppers/drains are temporarily blocked or un-serviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. .

C. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 ROOF TEAR-OFF

A. General: Notify Owner each day of extent of roof tear-off proposed for that day.

B. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the deck.

1. Remove cover boards roof insulation and thermal barrier (where existing).
2. Remove fasteners from deck.
3. Remove old wood equipment supports.
4. Remove old existing conduit and pipe supports.

3.3 DECK PREPARATION

A. Inspect deck after tear-off of membrane roofing system.

B. 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 Owner. Do not proceed with installation until directed by Owner.

C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Owner. Do not proceed with installation until directed by Owner.

D. Where scaling corrosion has compromised the structural integrity of the deck, remove and replace existing decking with new deck materials.

1. Deck replacement shall extend 2" past the nearest joist beyond the area of damage.
2. Deck replacement will be paid for by adjusting the Contract Sum according to unit prices included in the Contract Documents.

3.4 ROOF DECK CLEANING AND COATING – If areas of rust are found that requires coating, contact owner for approval. If approval is given clean rust and apply coating as per the following.

A. Wire brush exposed deck surface to remove all loose scale, oxidation, all non-adherent rust, and any loose portions of prior coatings.
1. Use power broom and hand power tools outfitted with 100% wire brushes. Nylon bristled brushes shall not be used.

B. After power tool preparation of the deck surface, and prior to coating application, remove all dirt, dust and similar contaminants.

1. Acceptable methods include: brushing, vacuuming, blowing with clean (dry) air.

3.5 EXISTING BASE FLASHINGS

A. Remove existing base flashings around parapets, curbs, walls, and penetrations.

1. Clean substrates of contaminants such as old adhesive, dirt, and debris.

B. Replace metal counter flashings damaged during removal with counter flashings of same metal, weight

or thickness, and finish.

3.6 SHEET METAL FLASHING, TRIM ANDACCESSORIES

A. Remove all existing counter flashings and discard.

B. Remove all perimeter metal and discard..

C. Remove existing scuppers and associated wall trim and discard.

3.7 ROOF SCUPPERS

A. Replace scupper components with new matching treated wood or 24 ga. Prefinished metal to match existing materials and non-corrosive fasteners.

3.8 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulation-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.

END OF SECTION 07 01 50

SECTION 77200 – SURE-WELD FLEECEBACK ADHERED ROOF SYSTEM

1. PART ONE - GENERAL

1.01 DESCRIPTION

PROJECT LOCATION

Mulvane Grade School, 411 Louis Drive, Mulvane, KS 67110

C. The project consists of installing Carlisle's Sure-Weld white FleeceBACK 115 mil membrane adhered with Flexible FAST as outlined below:

Remove existing roof systems down to metal deck. Install two layers of Carlisle 2.6”Insulbase Polyisocyanurate insulation, mechanically attached to metal deck, 1 every 2 sq. ft. Install new ½” per ft crickets between drains. Install a ½” HD Iso coverboard in Flexible Fast adhesive@ 6” o.c. bead spacing. Install Carlisle 115 mil TPO Fleeceback Roof System in Flexible Fast adhesive at 4” o.c. as specified in the Project Manual and per manufacturer requirements in order to obtain a 20 year, 90 mph Golden Seal Warranty with 3” hail warranty and 20 man hour Puncture warranty.

1.02 EXTENT OF WORK

A. Provide all labor, materials, tools, equipment, and supervision necessary to complete the installation of the Sure-Weld FleeceBACK Adhered Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.

B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.

D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating "as per plans and specs" will be unacceptable.

1.03 SUBMITTALS

A. Prior to starting work, the roofing contractor must submit the following:

1. Shop drawings showing layout, details of construction and identification of materials.

2. A sample of the manufacturer's Membrane System Warranty.

3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.

A. Certification from the membrane manufacturer indicating the membrane thickness over the reinforcing scrim (top ply membrane thickness) is nominal .015-mil or thicker.

B. Certification of the manufacturer's warranty reserve.

C. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.

B. Comply with the manufacturer's written instructions for proper material storage.

1. Store Sure-Weld membrane in a dry, cool, shaded area in the original undisturbed plastic. Sure-Weld membrane that has been exposed to the elements for approximately 7 days must be prepared with Weathered Membrane Cleaner prior to hot air welding.

2. Store curable materials (adhesives and sealants) between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.

3. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.

C. Insulation must be on pallets, off the ground and tightly covered with waterproof materials.

D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

1.05 WORK SEQUENCE

A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath or wick into any completed sections of the membrane system.

B. Do not disrupt activities in occupied spaces.

1.06 USE OF THE PREMISES

A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:

1. Areas permitted for personnel parking.

2. Access to the site.

3. Areas permitted for storage of materials and debris.

4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.

B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

1.07 EXISTING CONDITIONS

If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

1.08 PRECONSTRUCTION CONFERENCE

A. A mandatory pre-bid meeting will be held at the job site on Friday, April 16, 2021 at Mulvane Grade School at 10:30 A.M. Contact the owner's representative, Brad Canfield, if there are any questions.

B. Prior to bid submittal, the roofing contractor should schedule a job site inspection to observe actual conditions and verify all dimensions on the roof. The job site inspection may occur on the day of the pre-bid meeting or prior to such a meeting. Should access to the roof be necessary before or after the pre-bid meeting, the contractor must contact the owner's representative, Name and Title, at Phone Number to coordinate an appropriate time.

SEALED BIDS ARE DUE ON APRIL 23, 2021 AT 2:00 P.M. AND SHALL BE SUBMITTED TO: USD#263,628 E. MULVANE STREET, MULVANE, KS 67110

D. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal if necessary to clarify any conditions not shown.

1.09 TEMPORARY FACILITIES AND CONTROLS

A. Temporary Utilities:

1. Water, power for construction purposes and lighting are available at the site and will be made available to the roofing contractor.

2. Provide all hoses, valves and connections for water from a source designated by the owner when made available.

3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.

B. Temporary, Sanitary Facilities

Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

C. Building Site:

1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.

1. The roofing contractor shall remove all debris from the job site in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.

2. Security:

Obey the owner's requirements for personnel identification, inspection and other security measures.

1.10 JOB SITE PROTECTION

A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.

B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction areas from entering the remainder of the building.

C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.

D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.

E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas where work is in progress. Install flags or other telltales on plugs. Remove plugs each night and screen drain.

F. Store moisture susceptible materials above ground and protect with waterproof coverings.

G. Remove all traces of piled bulk material and return the job site to its original condition upon completion of the work.

1.11 SAFETY

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. Safety shall be the responsibility of the roofing contractor. All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

1.12 WORKMANSHIP

A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.

B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.

C. There shall be a supervisor on the job site at all times while work is in progress.

1.13 QUALITY ASSURANCE

A. The Sure-Weld Membrane Roofing System must achieve a UL Class A.

B. The specified roofing assembly must have been successfully tested by a qualified testing agency to resist the design uplift pressures calculated according to ANSI/SPRI WD-1 "Wind Design Standard

Practice for Roofing Assemblies" American Society of Civil Engineers (ASCE 7) International Building Code (IBC)

C. The membrane must be manufactured by the material supplier. Manufacturer's supplying membrane made by others are not acceptable.

D. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.

E. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.

F. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and an experienced superintendent on the job at all times roofing work is in progress.

G. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by written certification on manufacturer's letterhead and presented for the specifier's consideration.

H. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.

1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS

Refer to Carlisle's Fleeceback Adhered Roofing System specification for General Job Site Considerations.

A. Material Safety Data Sheets (MSDS) must be on location at all times during the transportation, storage and application of materials.

B. Do not apply FAST Adhesive when surface and/or ambient temperatures are below 25□F.

C. Drums of FAST Adhesive must be a minimum of 70□F at the time of use. Use drum band heaters when necessary.

D. The addition of FAST Adhesive Catalyst (to Part B side) is recommended to speed up reaction time when temperatures are below 50□F.

E. The contractor must exercise caution during adhesive spraying to avoid overspray.

Use a non-atomizing spray tip such as the Graco Spatter Tip and reduce spray pressure to 500 – 800 psi to increase adhesive droplet size and reduce airborn mist. Maintain hand held wind screens on-site for use as necessary.

Extruding FAST Adhesive method may be used to eliminate overspray concerns.

F. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.

G. When loading materials onto the roof, the Carlisle Authorized Roofing Applicator must comply

with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.

H. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.

I. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.

J. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.

J. New roofing shall be complete and weather tight at the end of the work day. Care must be taken to avoid wicking water though the fleece by properly sealing exposed edges of the membrane

K. Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane.

1.15 WARRANTY

A. Provide manufacturer's 20 year Total System Warranty covering both labor and material with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 90 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.

B. Warranty shall also cover leaks caused by accidental punctures:

1. 20 man-hours per year for 115-mil FleeceBACK utilizing Flexible Fast Adhesive.

C. Warranty shall also cover leaks caused by hail:

1. 3” diameter hail utilizing Flexible Fast adhesive.

D. Pro-rated System Warranties shall not be accepted.

E. Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

PART 2 - PRODUCTS

2.01 GENERAL

A. All components of the specified roofing system shall be products of Carlisle SynTec or accepted by Carlisle SynTec as compatible.

B. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including adhesives, insulation, fasteners, fastening plates and edgings) must be manufactured and supplied by the roofing system manufacturer and covered by the warranty.

2.02 MEMBRANE

A. Furnish Sure-Weld white FleeceBACK 115-mil reinforced TPO (Thermoplastic Polyolefin)

membrane. Membrane thickness over the reinforcing scrim (top-ply thickness) shall be nominal .015-mil or thicker.

B. Membrane Color: WHITE

C. Membrane Weathering Performance: The TPO membrane shall be formulated with OCTAGUARD XT Weathering Package to withstand 60 days of exposure at a 275° F temperature and a minimum of 17,000 kj/m xenon arc resistance at 80°F without cracking or showing signs of material failure, exceeding ASTM 6878.

2.03 INSULATION

A. When applicable, insulation shall be installed in multiple layers and mechanically fastened or secured with Carlisle FAST Adhesive to the substrate in accordance with manufacturer's published specifications.

B. Insulation shall be two layers of 2.6" Insulbase Polyisocyanurate (20 psi) as supplied by Carlisle SynTec.

1. Carlisle Insulbase Polyiso – A foam core insulation board covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-06, Type II, Class 1, Grade 2 (20 psi) .

2. Polyiso Crickets – ½" per ft. slope,

3. ½" HD ISO Coverboard

2.04 FASTENING COMPONENTS

To be used for mechanical attachment of insulation and to provide additional membrane securement:

A. Fasteners, Plates and Bars

1. InsulFast Fasteners: A threaded #12 fastener with #3 phillips drive used for insulation attachment into steel or wood decks.

2. HP Term Bar Nail-Ins: A 1-1/4" long expansion anchor with a zinc plated steel drive pin used for fastening the Carlisle Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.

1. Insulation Fastening Plates: a nominal 3 inch diameter plastic or metal plate used for insulation attachment.

B. Coverboard Adhesive:

1. Flexible FAST Adhesive: An elongating impact resistant two component insulating urethane adhesive used to attach insulation and FleeceBACK membrane. Packaging formats include 50 and 15 gallon drums.

a. Adhesive to provide 150% elongation in conjunction with fleece backed membrane – ASTM D412

b. MDI content of Part A material less than 25%

2.05 ADHESIVES, CLEANERS AND SEALANTS

All products shall be furnished by Carlisle and specifically formulated for the intended purpose.

A. Flexible FAST Adhesive: An elongating impact resistant two component insulating urethane adhesive used to attach insulation and FleeceBACK membrane. Packaging formats include 50 and 15 gallon drums.

   1. Adhesive to provide 150% elongation in conjunction with fleece backed membrane – ASTM D412

   2. MDI content of Part A material less than 25%

B. Cut-Edge Sealant: A white or clear colored sealant used to seal cut edges of reinforced Sure-Weld membrane. A coverage rate of approximately 225 - 275 linear feet per squeeze bottle can be achieved when a 1/8" diameter bead is applied.

C. Water Cut-Off Mastic: Used as a mastic to prevent moisture migration at drains, compression terminations and beneath conventional metal edging (at a coverage rate of approximately 10' per tube or 100' per gallon).

D. Universal Single-Ply Sealant: A 100% solids, solvent free, voc free, one part polyether sealant that provides a weather tight seal to a variety of building materials. It is white in color and is used for general caulking such as above termination bars and metal counter flashings and at scuppers.

E. Thermoplastic One-Part Pourable Sealer: A one-part, moisture curing, elastomeric polyether sealant used to fill TPO Molded Pourable Sealant Pockets. Packaged in 4, 2-liter foil pouches inside a reusable plastic bucket. 1 pouch will fill 2 TPO Molded Pourable Sealant Pockets.

F. Weathered Membrane Cleaner: Used to prepare membrane for heat welding that has been exposed to the elements or to remove general construction dirt at an approximate coverage rate of 400 square feet per gallon (one surface).

G. TPO Primer: A solvent-based primer used to prepare the surface of Sure-Weld Membrane prior to application of Pressure-Sensitive Coverstrip and TPO Pressure-Sensitive RUSS.

H. Cav-Grip Primer: a low VOC contact adhesive used to prime surfaces where unexposed residual asphalt is found on walls.

2.06 METAL EDGING AND MEMBRANE TERMINATIONS

A. General: All metal edging s shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code.
B. SecurEdge 2000: a metal fascia system with an extruded aluminum anchor bar and 24 gauge galvanized steel fascia. Metal fascia color shall be as designated by the Owner's Representative.

C. SecurEdge 200 Coping: incorporates a 20 gauge anchor cleat with 4 pre-slotted holes, a concealed joint cover and 10 foot continuous sections of coping cap; can accommodate minimum 5 “wide parapet walls. Metal coping cap color shall be as designated by the Owner's Representative.

D. Termination Bar: a 1” wide and .098” thick extruded aluminum bar pre-punched 6” on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.

2.07 WALKWAYS

Protective surfacing for roof traffic shall be Sure-Weld TPO Walkway Rolls installed per manufacturer's requirements or concrete pavers loose laid over an approved slip sheet (pavers not recommended for slopes greater than 2" in 12").

PART 3 EXECUTION

3.01 GENERAL

A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, job site considerations and weather restrictions.

B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

3.03 INSULATION PLACEMENT

A. Install insulation over the metal substrate with boards butted together. Fill joints or gaps greater than 1/4 inch with Flexible FAST Adhesive. Stagger joints both horizontally and vertically if multiple layers are provided.

B. Secure insulation to the substrate with mechanical fasteners in accordance with the manufacturer's specifications.

C. Secure coverboard with Flexible Fast adhesive at a rate of 6" o.c. bead spacing.

3.04 MEMBRANE PLACEMENT AND BONDING

A. Position and unroll successive sheets and align to provide a minimum 2 inch overlap (use pre-marked overlap line) along the selvage edge. At end laps (along the width of the sheet), membrane shall be butted together which will be overlaid with 6 inch wide Sure-Weld Reinforced Membrane and hot air welded on all edges.

B. FleeceBACK Membrane shall be fully adhered to the coverboard with Carlisle Flexible FAST Adhesive. The adhesive is spray applied or extruded to the substrate only and the membrane is rolled into the wet adhesive once it has foamed up and reached string/gel time (approximately 2 minutes). Roll the membrane with a weighted (100 - 150 pounds) steel roller to set the membrane into the adhesive.

Note: Exercise care to prevent overspray onto the membrane. If Flexible FAST Adhesive should contaminate the splice area, immediately (while the adhesive is still in liquid form) clean with Weathered Membrane Cleaner or allow Flexible FAST Adhesive to cure and remove with a paint-type scraper.

C. Position adjoining sheets to allow a minimum overlap of 2 inches to provide a minimum 1-1/2" hot air weld.

D. Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches and complete the bonding procedures as stated previously.

3.05 MEMBRANE HOT AIR WELDING PROCEDURES

A. General

The FleeceBACK membrane has a selvage edge (the fleece-backing is discontinued) along the length of the sheet for membrane splicing. Selvage edges are not provided along the width of the membrane; adjoining membrane sheets must be butted together and overlaid with 6 inch wide Sure-Weld Reinforced membrane heat welded on all sides.

B. Hot Air Welding Procedures

1. Hot air weld the Sure-Weld FleeceBACK membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.

   Note: When using 115-mil thick or thicker membrane, all splice intersections shall be overlaid with Sure-Weld T-Joint covers or non-reinforced flashing

2. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).

3. Repair all seam deficiencies the same day they are discovered.

4. Apply Cut Edge Sealant on all cut edges of reinforced membrane (where the scrim reinforcement is exposed) after seam probing is complete. Cut Edge Sealant is not required on vertical splices.

3.06 FLASHING

A. Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using Sure-Weld FleeceBACK membrane or Sure-Weld reinforced membrane. Sure-Weld non-reinforced membrane can be used for flashing pipe penetrations, Sealant Pockets, and scuppers, as well as inside and outside corners, when the use of pre-molded accessories is not feasible.

B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

3.07 WALKWAYS

A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the specifier's drawing.

B. Hot air weld walkway pads to the membrane in accordance with the manufacturer's specifications.

3.08 DAILY SEAL

A. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.

B. Use FAST Adhesive or other similar material in accordance with the manufacturer's requirements.

3.09 CLEAN UP

A. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.

B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

SECTION 07 62 00 - SHEET METAL FLASHING - 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. Section Includes:

1. Manufactured Products:

a. Manufactured pipe supports, copings, and fascia.

2. Formed Products:

a. Formed low-slope roof sheet metal fabrications.
b. Formed equipment support flashing.

B. Related Sections:
Divisions 02 through 07 Sections for specific carpentry requirements for the Work in those Sections.

1. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers and blocking.
2. Division 07 Section "Thermoplastic Polyolefin"(TPO) Roofing "for installing sheet metal flashing and trim integral with membrane roofing.
3. Division 07 Section "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 PERFORMANCEREQUIREMENTS

A. 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.

B. Install Pre-manufactured Carlisle 200 Fascia roof edge flashing and Carlisle 200 pre- manufactured copings capable of resisting the forces according to recommendations in FMG Loss Prevention Data Sheets 1-7, 1-28, and 1-49 for specific wind zone. Copings must meet ES-1 requirements and be a tested system.

C. Water Infiltration: Provide sheet metal flashing and trim that do not allow water infiltration to building interior.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

B. 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.

1.5 QUALITY ASSURANCE

A. 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.

B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

D. 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.

E. 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.

1.7 COORDINATION

A. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leak proof, secure, and noncorrosive installation.

PART 2 - PRODUCTS

2.1 SHEET METALS

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.

B. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90
Coating Designation , structural quality.

C. Prepainted, Metallic-Coated Steel Sheet: Steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.

1. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G90 coating designation; structural quality.
2. Exposed Finishes: Apply the following coil coating:

a. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

1) Fluoropolymer 2-Coat System: Manufacturer's standard 2-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with physical properties and coating performance requirements of AAMA 2605, except as modified below:
   a) Humidity Resistance: 2000 hours.
   b) Salt-Spray Resistance: 2000 hours.
2) Color: Match existing or as selected by Owner from manufacturer's full range of standard colors.

3) Thickness: 24 gauge steel with Kynar finish in color chosen by owner from full range of Carlisle SecureEdge standard colors.

4)

2.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal unless otherwise indicated.

B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.

1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.

a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.

2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Hot-dip galvanized steel according to ASTM A 153/A 153M or ASTM F 2329 or Series 300 stainless steel.

C. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

2.3 MANUFACTURED PIPE SUPPORTS

A. Manufactured Pipe Supports:.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Carlisle pipe supports for small pipes OR

b. Provide wood blocking and mounting hardware, pipe clamps and all accessories and hardware required to provide a complete installation for larger pipes.

2.4 FABRICATION, GENERAL

A. General: Pre-Manufactured Carlisle SecureEdge 200 Coping and SecureEdge 200 Fascia to be used at all parapets and metal edge locations.

B. Custom fabricate sheet metal flashing accessories and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated.

1. Obtain field measurements for accurate fit before fabrication.
2. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.

2.5 ROOF DRAINAGE SHEET METALFABRICATIONS

A. Parapet Scuppers: Fabricate scuppers of dimensions required with closure flange trim to exterior, 4-inch wide wall flanges to interior, and base extending 4 inches beyond cant tapered strip into field of roof. Fabricate complete with wall trim from the following materials:

1. Pre-painted metallic-coated Steel Sheet :24 ga

B. Roof-Penetration Flashing: Fabricate from the following materials:

1. Zinc-Coated (Galvanized) Steel Sheet: 22ga.

2.

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.

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.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PIPE BLOCKING INSTALLATION

A. Install manufactured pipe support blocking units in accordance with manufacturer's instructions and recommendations, and all applicable codes.

B. Space blocking as required to provide adequate support of piping, meeting any applicable code, but in no case more than 10 feet apart. 8 feet apart maximum for steel conduit.

C. Install properly sized channel mount pipe clamp(s) at each blocking unit to secure to pipe(s) being supported.

3.3 INSTALLATION, GENERAL

A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.

1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.

2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
5. Install sealant tape where indicated.
6. Torch cutting of sheet metal flashing and trim is not permitted.

B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.

C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

D. Fastener Sizes: Use fasteners of sizes that will penetrate wood sheathing not less than 3/4 inch for wood screws.

E. Seal joints as shown and as required for watertight construction.

1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient

temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.

2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

3.4 ROOF DRAINAGE SYSTEM INSTALLATION

A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.

B. 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 face plate.

3.5 ROOF FLASHINGINSTALLATION

A. General: Install sheet metal flashing and trim to comply with performance requirements and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible,

set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

B. Roof Edge Flashing: Anchor to resist uplift and outward forces according to recommendations in SMACNA's "Architectural Sheet Metal Manual" and as indicated by manufacturer.

C. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.6 ERECTIONTOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

3.7 CLEANING AND PROTECTION

A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.

B. Clean off excess sealants.

C. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.

D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

END OF SECTION 076200

SECTION 07 71 00

ROOF EDGE AND VENTILATION SYSTEMS

PART 1 GENERAL

SECTION INCLUDES

Metal Fascia.

Metal Coping.

Accessories.

RELATED SECTIONS

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Section 07620 - Sheet Metal Flashing and Trim.

Section 07720 - Roof Accessories:

REFERENCES

ANSI/SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

SPRI Single Ply Roofing Industry Standards.

SUBMITTALS

Submit under provisions of Section 01300.

Product Data: Manufacturer's data sheets on each product to be used, including:
Preparation instructions and recommendations.
Storage and handling requirements and recommendations.
Installation methods.

Shop Drawings: Show profiles, joining method, location of accessory items, anchorage and flashing details, adjacent construction interface, and dimensions.

Selection Samples: For each finish product specified, two complete sets of color charts representing manufacturer's full range of available colors and patterns.

Verification Samples: For each finish product specified, two sample chips representing actual product, color, and patterns.

Manufacturer's Certificates: Certify products meet or exceed specified requirements.

QUALITY ASSURANCE

Manufacturer Qualifications: Company specializing in manufacturing Products specified in this section with minimum twenty five years documented experience.

Installer Qualifications: Company specializing in the installation of products specified in this section with minimum five years documented experience.

DELIVERY, STORAGE, AND HANDLING

Store products in manufacturer's unopened packaging until ready for installation.

Store materials in a dry, protected, well-vented area.

Remove protective plastic surface film immediately before installation.

Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

SEQUENCING

Ensure that information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.

Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

Coordinate installation with roof membrane manufacturer's installation instructions.

PROJECT CONDITIONS

Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

WARRANTY

Provide the manufacturer's warranty specified under products for the roof edge system, when installed per manufacturer's instructions. Warranty will not exceed the life of the roof membrane on which the product was originally installed.

Provide a 30 year warranty for manufacturer approved 70 percent Kynar colors for the painted finish covering color fade, chalk, and film integrity.

PART 2 PRODUCTS

MANUFACTURERS

Acceptable Manufacturer: Carlisle Syntec

Substitutions: Not permitted.

ROOF EDGE PRODUCTS

SecurEdge 200 Fascia: Decorative metal fascia with continuous galvanized steel waterdam to terminate single-ply roofing at perimeter.
Construction:
Fascia Metal:24 gauge pre-finished galvanized steel
Fascia: standard 12 feet 0 inches (3.65 m) lengths with matching concealed joint splice plates.
Waterdam: Continuous 24 gauge commercial type G-90 galvanized steel at 12 feet 0 inches (3.65 m) standard lengths.
Fasteners: 1-1/4 inch (32 mm) Galvanized Ring Shank Roofing Nails.
Single-Ply Application, Snap-On Version with 24 gauge (.65 mm) spring clips 4 foot (1.22 m) o.c.
Performance:
20 Year, 110 mph Wind Warranty.
Face heights of 5-1/4 inch to 8-1/4 inch are tested per ANSI/SPRI ES-1 Standard to a design pressure of 160 lbs./ft^2 and face heights of 9-3/4 inch to 12-3/4 inch are tested to a design pressure of 110 lbs./ft^2 to comply with the International Building Code.

SecurEdge Coping Construction:

Coping Metal:24 gauge galvanized steel, Kynar finish, color to be chosen by owner from Carlisle Standard Colors.

Construction:

Coping cap: length of 12 feet 0 inches (3.65 m), widths to 24 inch (101.6 mm) manufactured to job requirements. True radii may be built to template.

Coping vertical face and back leg: 2-1/4 inch to 12-1/2 inch (57 mm to 3175 mm) manufactured to job requirements.

Concealed splice plates: 8 inch (203 mm) wide. Finish to match finish of coping cap with factory applied dual non-curing sealant strips.

Anchor/Support Cleat: 20 gauge pre-punched galvanized cleat with stainless steel spring mechanically locked to cleat normally 12 inch (305 mm) wide at 4 foot 0 inch (1.22 m) on center. Mechanically fastened as indicated and detailed.

Fasteners: 1-1/2 inch (38 mm) Stainless Steel with driver.

Tapered Version

Performance:

20 Year, 110 mph Wind Warranty

Tested per ANSI/SPRI ES-1 Standard to comply with the International Building Code.

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END OF SECTION