

Addendum

No. ONE Date: 10.21.20

Project:

**Re-Roofing Bandroom Building at
Cherokee County High School for the
Cherokee County Board of Education
Centre, Alabama**

**MCKEE PROJECT NO. 2020.228
ALABAMA DIVISION OF CONSTRUCTION MANAGEMENT NO. 2020522**

The following changes and/or substitutions to the plans and specifications are hereby made a part of same and are incorporated in full force as part of the contract.

Bidders shall acknowledge receipt of this Addendum in writing on his Proposal Form.

A1.1 GENERAL MODIFICATIONS:

A. NONE

A1.2 SPECIFICATION MODIFICATIONS:

- A. **DELETE** Section 07410, **Preformed Metal Roofing**, in its entirety.
- B. Refer to **Section 07411, Preformed Metal Roofing**, herein.

A1.3 DRAWING MODIFICATIONS:

A. NONE

A1.4 CLARIFICATIONS & RESPONSES:

A. NONE

END OF ADDENDUM

SECTION 07411 - PREFORMED METAL ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract including General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. The work under this section consists of all preformed metal roofing, underlayment, ridge vent system, sheet metal, roof drainage accessories and all related items necessary to complete the roofing system work indicated on the drawings and herein specified including but not limited to the following:
 - 1. Formed Roof Panels for Standing Seam Installation
 - 2. Underlayment.
 - 3. Workmanship
 - 4. Inspection of Surfaces
 - 5. Protection
 - 6. Delivery, Samples and Shop Drawings

1.3 QUALITY ASSURANCE

- A. Performance Test Standards: Provide preformed panel systems which have been pretested and certified by manufacturer to provide specified resistance to air and water infiltration and structural deflection and failure when installed as indicated and when tested in accordance with AAMA 501, "Methods of Test for Metal Curtain Walls".
- B. Field Measurements: Where possible, prior to fabrication of prefabricated panels, take field measurements of structure or substrates to receive panel system. Allow for trimming panel units where final dimensions cannot be established prior to fabrication.
- C. Impact Resistance: Roof coverings installed on low-slope roofs (roof slope <2:12) shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, CGSB 37-GP-52M or the "Resistance to Foot Traffic Test "FM 4470.

1.4 SUBMITTALS

- A. Product Data: Submit manufacturer's product specifications, standard details, certified product test results, installation instructions and general recommendations, as applicable to materials and finishes for each component and for total system of preformed panels.
- B. Samples: Submit 2 samples 12" square, of each exposed finish material.
- C. Shop Drawings: Submit small-scale layouts of panels on roofs, and large-scale details of edge conditions, joints, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Distinguish between factory and field assembly work.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver and store prefabricated components, sheets, panels and other manufactured items so they will not be damaged or deformed.

- B. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight ventilated covering. Store metal sheets or panels so that water accumulations will drain freely. Do not store sheets or panels in contact with other materials which might cause staining.

1.6 ROOFER'S QUALIFICATIONS

- A. Installation of the metal roofing and roof related accessories shall be performed by **Certified / Preferred Roofers** authorized by the manufacturer as trained and qualified to erect the manufacturer's product.
- B. The Contractor shall submit a letter from the manufacturer of the metal roofing system, certifying the date of certification from the Manufacturer and the dates and year the Roofing Contractor attended school, prior to full certification that this Roofing Contractor is a certified roofer.

1.7 ROOFING WARRANTIES & GUARANTEE

A. Weather Tightness Warranty

1. The entire installation (sub-framing, clips, panels, fasteners, rakes, eave, ridge, valley flashing conditions, roof to wall conditions as-well-as all materials specified as supplied by the manufacturer) shall be guaranteed weather tight for a minimum of **Twenty (20) years (NO Dollar Limit NDL)**. Provide written warranty, signed by metal roofing manufacturer and his authorized installer, agreeing to replace/repair defective materials and workmanship during the warranty period, certified by the third-party inspection firm as stated under QUALITY ASSURANCE. This warranty shall be identified as neither Non-Depreciating, Non-Pro-Rated, nor have exclusions that identify, valleys, curbs, and flashings. The warranty shall be signed by the Manufacture of the roofing materials and the authorized installer.
2. Compatibility: Provide products which are recommended by manufacturers to be fully compatible with indicated substrates or provide separation materials as required to eliminate contact between incompatible materials.

B. Manufacturer's Warranty

1. **Manufacturer's roofing warranties which contain language regarding the governing of the warranty by any state other than the State of Alabama, must be amended to exclude such language, and substituting the requirement that the Laws of the State of Alabama shall govern all such warranties.**
2. Roof Panels: Durability of the metallic coated and unpainted roof panels due to rupture, structural failure or perforation shall be warranted for a period of **Twenty (20) years** by the manufacturer.
3. Color Finish:
 - a. The exterior color finish for painted panels shall be warranted by the Manufacturer for **Twenty-five (25) years** against blistering, peeling, cracking, flaking, chalking and shipping.
 - b. Excessive color change and chalking shall be warranted for **Twenty-five (25) years**.
 - i. Color change shall not exceed 5 NBS units per ASTM D2244.68T, chalking shall not be less than a rating of 6 (white) or 8 (other colors) per ASTM D-659.
4. The roofing manufacture shall be required to provide documentation certifying that the roof design provided complies with the performance requirements as set forth in IBC Chapter 15, Section 1504. The documentation shall be attached to the roof warranty at the close out of the project.

- C. Contractor's Roofing Guarantee
 - 1. Contractor shall furnish Contractors **5 Year** Alabama Division of Construction Management Roofing Guarantee. This roofing guarantee is included in the front end documentation of this project manual.
- D. All roof warranties/guarantees shall be provided to the Owner, by the Contractor at the Final Inspection to obtain the Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:
 - 1. American Buildings Company/A Nucor Company; **(Basis of Design and Quality)**; www.americanbuildings.com; 1150 State Docks Road, Eufaula, Alabama 36027; Phone: 334.687.2032.
 - 2. Butler Manufacturing; www.butlermfg.com; 1540 Genessee St., Kansas City, MO. 64102; Phone: 816.968.3000
 - 3. MBCI Manufacturing; www.mbc.com; 2280 Monier Avenue, Lithia Springs, Georgia, 30122; Phone: 844.2506 or 770.729.4772.
 - 4. Varco Pruden; www.vp.com; 3200 Players Club Circle, Memphis, TN 38125; Phone: 1.901.748.8000
 - 5. Morin / A Kingspan Group Company; www.kingspan.com/us/en-us/product-groups/metal-roof-wall-systems; 1975 Eidson Drive, Florida, 32724; Phone: 860.584.0900 or 800.640.9501
 - 6. ACI Building Systems, LLC.; www.acibuildingsystems.com; 10125 Highway 6 West, Batesville, MS 38606; Phone: 662.563.4574

2.2 MATERIALS

- A. All materials shall be from a single source.
- B. Loc-Seam 360 with Kynar 500 Finish by American Buildings Company/A Nucor Company.
 - 1. Standing seam roof panel shall have a configuration consisting of 2 inch high vertical rib spaced on 16 inch centers. The panel shall have flush horizontal and vertical surfaces to facilitate sealing at terminations. Panel configurations which create voids requiring supple metal closure devices shall not be considered acceptable. Panels shall be joined at the sidelap with an interlocking seam mechanically locked by a seaming machine after installation. The female panel seam shall have a factory applied sealant, in compliance with UL90.
 - 2. The panel shall be **24 gauge (minimum)** commercially pure aluminum coated steel meeting military specification MIL-C-4174A Type II, Galvalume or G90 galvanized. Minimum yield strength shall be 80,000 PSI.
 - 3. Deviations in appearance from the quality standard manufacturer's panel must be approved by the owner before acceptance.
 - 4. Changes in framing or variations in loading to the existing structure caused by alternate roof

systems shall be subject to review and all costs for any modifications shall be the responsibility of the General Contractor.

5. System Description: The roof system is a concealed fastener interlocking standing seam system. ***Panel must not be roll formed on site, nor use a portable roll former whereby the contractor manufactures the panel versus a single sourced manufacture providing the finished materials with a single sourced warranty.***
6. Roof panels shall be standing seam interlocking design and secured to the supports with a concealed structural fastening system. UL certification must appear on the panel if so requested.
7. The concealed attachment system shall eliminate all through penetration of the exposed roofing surface into structural supports and allow the roof covering to move independently of any differential thermal movement by the framing system.
8. The panel to structural clip shall be designed to provide +/- one inch of thermal movement. It shall incorporate a self centered feature to assure one inch of movement in both directions.
9. The standing seam shall have integral male and female interlocking ribs with a factory applied, non-hardening sealant, and the seams shall be continuously locked or crimped together by mechanical means during installation.
10. Roof panels shall be fastened to the support framing members with a concealed clip or backing device of steel having a protective metallic coating. Through penetration of the roofing surface by exposed fasteners shall occur only for non-structural connection at panel termination and roof perimeter flashing location.
11. Panel termination and perimeter flashing (attached to roof panels) shall be sealed with sealants recommended by the manufacturer.
12. Required closures shall be metal. Non-metal closures shall not be acceptable.

2.3 METAL FINISHES

- A. General: Apply coating either before or after forming and fabricating panels, as required by coating process and as required for maximum coating performance capability. Protect coating promptly after application and cure, by application of strippable film or removable adhesive cover and retain until installation has been completed.
- B. Color Finish on Roof Panels and Trim:
 1. Panels shall have a factory color finish on the exposed side. The exposed finish shall consist of a 70% KYNAR 500® resin base coating applied to a cleaned, pretreated and primed surface. The dry film thickness of the exterior coating shall not be less than .90 mil minimum, inclusive primer. The interior color finish shall consist of a backer coat with a dry film thickness of 0.5 mil. A low gloss finish is required to minimize the appearance of oil canning.
 2. Color of the exterior roof panels and trim shall be selected from manufactures standard color pallet.
 3. The exterior color finish shall meet or exceed the performance requirements specified below.
 - a. Paint Color Test:
 - i. Test: Film Thickness; Test Method: ASTM D-1005; Performance: 0.2 mil primer
0.8-0.9 mil topcoat
 - ii. Test: 60° @ under 10 low gloss; Test Method: ASTM D-523; Performance: 25-35

- iii. Test: IR Reflectivity; Test Method: ASTM D-4803-97; Performance: Must meet 25% Minimum (exceeds)
- iv. Test: Pencil Hardness; Test Method: ASTM D-3363; Performance: HB-H
- v. Test: Flexibility, T-Bend; Test Method: ASTM D-4145; Performance: 2-T Galvalume Steel
- vi. Test: Adhesion; Test Method: ASTM D-3359; Performance: No adhesion Loss
- vii. Test: Reverse Impact; Test Method: ASTM D-2794; Performance: No cracking or loss of adhesion
- viii. Test: Abrasion, Falling Sand; Test Method: ASTM D-968; Performance: 65-85 1/mil
- ix. Test: Mortar Resistance; Test Method: ASTM C-267; Performance: No effect
- x. Test: Detergent Resistance; Test Method: ASTM D-2248 3% 72 hrs. @ 100°F; Performance: No effect
- xi. Test: Acid Pollutants; Test Method: ASTM D-1308 10% Muriatic Acid (15 min) 20% Muriatic Acid (15 min); Performance: No effect, AAMA 605.2 <5units color change
- xii. Test: Acid Rain Test; Test Method: Kesternich; Performance: 15 cycles minimum, no objectionable color change
- xiii. Test: Alkali Resistance; Test Method: 20% Sodium Hydroxide (1hr); Performance: No effect
- xiv. Test: Salt Spray Resistance 5% @ 95° F; Test Method: ASTM B-117; Performance: 1000 hrs Galvalume steel
- xv. Test: Humidity Resistance 100% @ 100° F; Test Method: ASTM D-2247; Performance: Passes 1000 hrs Galvalume Steel
- xvi. Test: South Florida exposure; Test Method: ASTM D-2244; Performance: <5 units color change
- xvii. Test: UVB (313 bulbs); Test Method: ASTM G-53; Performance: Passes 3000 hrs
- xviii. Test: Chalk Resistance; Test Method: ASTM D-4214; Performance: Rating of 8 min

4. Colors must meet the following: The solar reflectance for a steep-sloped roof must be a minimum of 25%, dropping no less than to 15% after three years. Low sloped roofs (below 2:12) must be a minimum of 65% dropping to no less than 50% after three years.

2.4 ROOF PANELS

- A. General: Provide roofing sheets formed to the general profile or configuration indicated. All roof panels shall be full length, no end laps allowed.
- B. Zinc-Coated Steel Sheets: Provide structural quality hot-dip galvanized steel sheets, complying with requirements of ASTM A446, Grade C, with G90 coating complying with ASTM A525.
- C. Aluminum Coated Steel Sheets: Provide drawing quality aluminum coated steel sheets, complying with requirements of ASTM A463, with T1-40 coating.
 - 1. Metal thickness not less than 24 ga. (0.0179").
- D. Accessories: Provide the following sheet metal accessories factory formed of the same material and finish as the roofing and siding.
 - 1. Flashings.
 - 2. Fillers.
 - 3. Metal expansion joints.
 - 4. Facias
 - 5. Ridge covers.
 - 6. Cover exposed structural and secondary members at exterior.

E. Fasteners:

1. Provide self-tapping screws, bolts, nuts, self-locking rivets, self-locking bolts, end welded studs, and other suitable fasteners as standard with the manufacturer designed to withstand design loads.
2. Provide metal-backed neoprene washers under heads of fasteners bearing on weather side of panels.
3. Use stainless steel fasteners for exterior application and galvanized or cadmium plated fasteners for interior applications.
4. Locate and space fastenings in true vertical and horizontal alignment. Use proper type fastening tools to obtain controlled uniform compression for positive seal without rupture of neoprene washer.
5. Provide fasteners with heads matching color of roofing sheets by means of plastic caps or factory-applied coating.

F. Flexible Closure Strips: Provide closed-cell, expanded cellular rubber, self-extinguishing flexible closure strips. Cut or premold closure strips to match corrugation configuration of roofing and siding sheets. Provide closure strips where indicated or necessary to ensure weathertight construction.

G. Sealing Tape: Provide pressure sensitive 100 percent solids isobutylene tripolymer compound sealing tape with release paper backing. Provide permanently elastic, non-sag, non-toxic, non-staining tape not less than 1/2" wide and 1/8" thick.

H. Joint Sealants: Provide one-part elastomeric polyurethane polysulfide or silicone rubber sealant as recommended by the building manufacturer.

2.5 UNDERLAYMENTS

A. Synthetic Underlayment:

1. Manufacturers: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:

- a. SDP Advanced Polymer Products
- b. GAF
- c. Tamko
- d. ELK
- e. Certainteed

2. Materials:

- a. One layer of a Class A synthetic flame retardant underlayment.
- b. Palisade Synthetic Underlayment; SDP Advanced Polymer Products
 - i. Tensile Strength – ASTM D226 – 150lbs
 - ii. Tear Strength – ASTM D4533 – 50lbs
 - iii. Puncture Strength – ASTM D751 – 300 psi
 - iv. UV Rating – ASTM G90 – 90%
 - v. Permeability – ASTM 96-A – 0.10 Perms
 - vi. Thickness – ASTM D5147 – 25 mills
 - vii. Weight per Square – ASTM D5261 – 4 lbs.
 - viii. Install with roofing nails – no staples will be allowed.

B. Self-Adhered Underlayment:

1. Manufacturers: The following manufacturers' products have been used to establish minimum standards for materials, workmanship and function:
 - a. SDP Advanced Polymer Products
 - b. Carlisle Dri-Start A
 - c. Tamko Moisture Guard
2. Materials:
 - a. At all Valleys, Ridges, Hips and Eaves install 40 mil self- adhering ice and water shield membrane.
 - b. Palisade SA-HT; SDP Advanced Polymer Products
 - i. Color - KOOL BLUE™
 - ii. Top Surface - STRONGHOLD™ Anti-Skid Technology: Polymer
 - iii. Bottom Release Liner - Silicone Split Release Poly
 - iv. Permeability - ASTM E96 - 00 0.01 perms
 - v. Nominal Thickness - ASTM D1777 - 40 mil (1 mm)
 - vi. Nail Sealability - ASTM D1970 - Pass
 - vii. Lap Sealability - ASTM D1970 - Pass
 - viii. Tensile Strength - ASTM D226 - 121 lbf/in. (21kN/m)
 - ix. Tear Strength - ASTM D4523 - 160 lbf/in. (28 kN/m)
 - x. Elongation - ASTM D2523-00 - 16%
 - xi. Low Temperature Flexibility - ASTM D1970 - -22 F (-30 C) - Pass
 - xii. Adhesion to Plywood - ASTM D1876 - 55 lbf/in.:75 F (9.6 kN/m: 24 C)
 - xiii. Adhesion to Plywood - ASTM D1876 - 23 lbf/in.: 40 F (4 kN/m: 4.4 C)
 - xiv. UV Exposure - ASTM G90 - 6 months
 - xv. Temperature Range - ASTM D1970 - LT: 15 F (-9 C) to HT: 250 F (121 C)
 - xvi. Dimensions - 36 in. x 66.7 ft. (91.4 cm x 20.3 m)

2.6 MISCELLANEOUS MATERIALS

- A. Internal Panel Framing: Manufacturer's standard.
- B. Fasteners: Manufacturer's standard noncorrosive types, with exterior heads gasketed.
- C. Accessories: Except as indicated as work of another specification section, provide components required for a complete roofing/siding system, including:
 1. Trim
 2. Copings
 3. Fascias
 4. Gravel stops
 5. Mullions
 6. Sills
 7. Corner Units
 8. Ridge Closures
 9. Clips
 10. Seam Covers
 11. Battens
 12. Flashings
 13. Gutters
 14. Downspouts
 15. Louvers
 16. Sealants
 17. Gaskets

18. Fillers
19. Closure Strips
20. All similar items.
21. Match materials/finishes of preformed panels.

D. Bituminous Coating: Cold-applied asphalt mastic, SSPC paint 12, compounded for 15 mil dry film thickness per coat.

2.7 SHEET METAL ACCESSORIES

- A. General: Provide coated steel sheet metal accessories with coated steel roofing and siding panels.
- B. Gauges of Materials:
 1. Roof Panels - 24 ga.
 2. Rake Flashing - 26 ga.
 3. Fascia – 26 ga.
- C. Roof Curbs: The fully welded roof curb units shall be fabricated to the specifications of the roofing manufacturer, thus assuring its compatibility with the roof constructions framing and covering. Roof curbs shall be of size and design to accommodate the various projecting elements to be retained. The contractor is responsible for verification of the various sizes, configurations, and requirements. It is expected that the contractor use the existing conditions, surfaces, and elements as a source material for these requirements. The roof curb shall be of size and design required for fan, vent or air conditioning equipment. It shall support the specific ventilating device in a nominally horizontal position above the weather surface of the roof and adequately deflect storm drainage around its periphery. All sealants, closures and fasteners, etc. shall be included for proper installation and performance. Roof subframing and/or headers shall be provided for additional rigidity and support of the curb and its ventilating device. Roof vent curb and supporting framing shall provide for expected expansion and contraction of roof panels.
- D. Roof Jacks: Openings 8" in diameter or smaller may be flashed and sealed to the roof panel by jacks. Material shall be an EPDM material with an aluminum sealing ring base. Jacks are acceptable providing attachment in flat of panel and no standing seam rib has been altered. If rib must be cut, a curb must be used. Installation of roof jacks must comply with manufacturer's instructions.

PART 3 - EXECUTION

3.1 PRE-ROOFING CONFERENCE

- A. A pre-roofing conference is required before any roofing materials are installed. This conference shall be conducted by a representative of the Architect and attended by representatives of the Owner, Division of Construction Management Inspector, General Contractor, Roofing Contractor, Sheet Metal Contractor, Roof Deck Manufacturer (if applicable), and the Roofing Materials Manufacturer (if warranty is required of this manufacturer). If equipment of substantial size is to be placed on the roof, the Mechanical Contractor must also attend this meeting. Provide at least 72 hours advance notice to participants prior to convening pre-roofing conference.
- B. The pre-roofing conference is intended to clarify demolition and application requirements for work to be completed before roofing operations can begin. This would include a detailed review of the specifications, roof plans, roof deck information, flashing details, and approved shop drawings, submittal data, and samples. If conflict exists between the specifications and the Manufacturer's requirements, this shall be resolved. If this pre-roofing conference cannot be satisfactorily concluded without further inspection and investigation by any of the parties present, it shall be reconvened at the earliest possible time to avoid delay of the work. In no case should the work

proceed without inspection of all roof deck areas and substantial agreement on all points.

C. The following are to be accomplished during the conference:

1. To review all Factory Mutual and Underwriters Laboratories requirements listed in the specifications and resolve any questions or conflicts that may arise.
2. To establish trade-related job schedules, including the installation of roof-mounted mechanical equipment.
3. To establish roofing schedule and work methods that will prevent roof damage.
4. Require that all roof penetrations and walls be in place prior to installing the roof.
5. To establish those areas on the job site that will be designated as work and storage areas for roofing operations.
6. To establish weather and working temperature conditions to which all parties must agree.
7. To establish acceptable methods of protecting the finished roof if any trades must travel across or work on or above any areas of the finished roof.

D. The Architect shall prepare a written report indicating actions taken and decisions made at this pre-roofing conference. This report shall be made a part of the project record and copies furnished the General Contractor, the Owner, the Division of Construction Management, and the Division of Construction Management Inspector.

3.2 EXECUTION TEAR OFF TO EXISTING DECKING/REPLACEMENT

A. Removal of Existing Roof Systems as follows:

1. The Contractor shall remove entire existing roof system(s) and flashing components down to existing decking.
2. Contractor is to notify the Architect of any damaged / deteriorated roof decking. If directed by the Architect, the contractor shall replace damaged portions of the decking per the Unit Price on the proposal form.
3. Ensure the existing roof deck is clean, dry, and free of any voids.

B. Underlayment Application as follows:

1. Synthetic Underlayment:
 - a. Apply one layer of synthetic underlayment horizontally, free of wrinkles, over entire roof deck surface, lapping succeeding courses 2" minimum in direction to shed water, and lapping ends min. 4" with adjacent end laps staggered 60". Provide 18" each side of hips. Fasten 36" max. o.c. or as necessary to assure stable placement of felt underlayment until the preformed metal roof panels are installed. Fasten with nails (no staples).
2. Self-Adhered Underlayment:
 - a. Install at all Valleys, Ridges, Hips and Eaves, Penetrations, Curbs, Rakes, and Roof Edges.
 - b. Install underlayment centered to the center of the valley. Extend minimum of 1'-6" in each direction from middle of all valleys.

- c. Install upward from the edge of all eaves a total distance of 72".
 - d. Install on all ridges and hips a distance of 36" on each side of all ridge and hip lines.
 - e. Install 18" wide strip each side of expansion joint flange.
- C. Installation of New Roof as follows:
- 1. Contractor shall provide and install new preformed metal roof panels.
 - 2. The Contractor shall provide and install all new flashings and associated metal components as required and detailed.
 - 3. The contractor shall provide and install all new fascia, soffit, drip edge, diverters, sheet metal, gutters and downspout per drawings and specifications.
 - 4. Provide the following Warranties:
 - a. Provide a **20-year** NDL manufacturer's warranty.
 - b. Provide a **5-year** General Contractor's Roofing Guarantee workmanship warranty found in Contract Forms section of this manual.

3.3 INSTALLATION - GENERAL

- A. General: Comply with panel fabricator's and material manufacturer's instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal/structural movement.
 - 1. Install panels with concealed fasteners.
- B. Installation Tolerances: Shim and align panel units within installed tolerance of 1/4" in 20'-0" on level/plumb/slope and location/line as indicated, and within 1/8" offset of adjoining faces and of alignment of matching profiles.
- C. Joint Sealers: Install gaskets, joint fillers and sealants where indicated and where required for weatherproof performance of panel systems. Provide types of gaskets and sealants/fillers indicated or, if not otherwise indicated, types recommended by panel manufacturer.
- D. Refer to other sections of these specifications for product and installation requirements applicable to indicated joint sealers.
- E. Water shall be prevented from entering the building during the work. This shall involve keeping penetrations sealed, planning the work to reroof sections and sealing new to old or other precautionary and effective safeguards.

3.4 ROOFING - GENERAL

- A. General: Arrange and nest sidelap joints so that prevailing winds blow over, not into, lapped joints. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line. Protect factory finishes from damage.
 - 1. Provide weatherseal under ridge cap. Flash and seal roof panels at eave and rake with rubber, neoprene or other closures to exclude weather.
- B. Standing Seam Roof Panel System: Fasten roof panels to hat channels with concealed clip in accordance with the manufacturer's instructions.
 - 1. Install clips at each support using self-drilling fasteners.
 - 2. At end laps of panels install two strips of tape caulk between panels.

3. Install factory-caulked cleats at standing seam joints. Machine seam cleats to the panels to provide a weather-tight joint.
- C. Sheet Metal Accessories: Install gutters, downspouts, ventilators, louvers, and other sheet metal accessories in accordance with manufacturer's recommendations for positive anchorage to building and weathertight mounting. Adjust operating mechanism for precise operation.

3.5 CLEANING AND PROTECTION

- A. Damaged Units: Replace panels and other components of the work which have been damaged or have deteriorated beyond successful repair by means of finish touch-up or similar minor repair procedures.
- B. Cleaning: Remove temporary protective coverings and strippable films (if any) as each panel is installed. Upon completion of panel installation, clean finished surfaces as recommended by panel manufacturer and maintain in a clean condition during construction.

END OF SECTION