Return Bid To:
MARSHALL COUNTY ENGINEERING
424 BLOUNT AVENUE, SUITE A337
GUNTERSVILLE, AL 35976
(256) 571-7712

BID NO: 32-25

BID OPENING DATE & TIME: TUESDAY, MARCH 3, 2026 - 2:00 P.M.

LOCATION: ROOM A319 - COMMISSION CHAMBERS - 3RD FLOOR - MARSHALL COUNTY COURTHOUSE - GUNTERSVILLE, AL

INVITATION FOR BIDS FOR THE REPLACEMENT OF THE ROOF OF THE MARSHALL COUNTY COURTHOUSE LOCATED IN GUNTERSVILLE, AL

VENDOR'S RESPONSE:

VENDOR'S NAME: _____

VENDOR'S ADDRESS: _____

_____

TELEPHONE NO. _____

FAX NO. _____

E-MAIL _____

CONTRACTOR LICENSE NO. _____

TOTAL BID PRICE (complete in-place)

$ _____

VENDOR'S RESPONSE:
I hereby agree to furnish the above-named items on or by the dates requested and hereby certify that all specifications set above will be met.

_____ _____
Authorized Representative Typed or Written Name

SCOPE OF WORK:

The following is a scope of work for a new metal roof system at the Marshall County Courthouse in Guntersville, Alabama. The scope applies to the Northwest roof area which is approximately 10,100 square feet (see next pages).

1. Remove and dispose of the existing metal roof system, batt insulation, gutter and downspout.
2. Inspect metal hat channels spaced at 36" on center and replace if necessary.
3. Remove and dispose existing coping at parapet walls with EIFS below.
4. At parapet wall locations with EIFS install hat channels, underlayment, metal wall panels, and coping.
5. Install 2" vinyl back batt insulation over hat channels.
6. Install IMETCO ZipRib metal roofing system associated trim: 24-gauge, 16' wide panels, copper in color.
7. Install gutter and downspout: 24-gauge copper in color.

SPECIFICATIONS:

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. Work described in this section includes pre-formed metal roofing system complete with batt insulation, clips, perimeter and penetration flashing, closures, gutters, and downspouts.

B. Metal wall panels (see specification section 074213).

C. Coping (see specification section 077100).

D. Related work specified elsewhere:

1. Metal roof decks.
2. Wood roof decks.
3. Metal fabrications.
4. Rough carpentry.
5. Flashing and sheet metal. (Not roof panel related).
6. Air barrier and vapor retarder.
7. Thermal insulation.

8. Sealants.

1.3 DEFINITIONS

A. American Architectural Manufacturer Association (AAMA):

1. AAMA 501.1-17: Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure.

2. AAMA 621-02: Voluntary/Standard Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates

B. American Iron and Steel Institute (AISI):

1. S100-16: 2016 Edition of the North American Specification for the Design of Cold-Formed Steel Structural Members.

C. American Society of Civil Engineers (ASCE):

1. ASCE 7-16: Minimum Design Loads and Associated Criteria for Buildings and Other Structures.

D. American Society for Testing and Materials (ASTM):

1. A653-19a: Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

2. A755–18 Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Pre-painted by the Coil-Coating Process for Exterior Exposed Building Products.

3. A792-10(2015): Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.

4. B209-14: Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

5. D1056-14: Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.

6. D3575-14: Standard Test Methods for Flexible Cellular Materials made from Olefin Polymers.

7. E1514-98(2017) e1 Standard Specification for Structural Standing Seam Steel Roof Panels.

8. E1592-05(2017): Standard Test Method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference.

9. E1637-98(2017) e1 Standard Specifications for Structural Standing Seam Aluminum Roof Panel Systems.

10. E1646-95(2018): Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference.

11. E1680-16: Standard Test Method for Rate of Air Leakage Through Exterior Metal Roof Panel Systems.

12. E2140-01(2017): Standard Test Method for Water Penetration of Metal Roof Panels Systems by Static Water Pressure Head.

E. Factory Mutual Approvals (FM):

1. FM 4471, August 1995: Approval Standard for Class I Panel Roofs.

F. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):

1. Architectural Sheet Metal Manual, 7th edition.

G. Underwriters Laboratory (UL):

1. UL 580, 5th Ed.: Standard for Tests for Uplift Resistance of Roof Assemblies.
2. UL 790, 8th Ed.: Standard for Tests for Fire Resistance of Roof Covering Materials.

H. National Association of Architectural Metal Manufacturers (NAAMM)

1. Metal Finishes Manual for Architectural and Metal Products

1.4 DESIGN AND PERFORMANCE CRITERIA.

A. Thermal Expansion and Contraction.

1. Completed metal roofing and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling or reducing performance ability.
2. The design temperature differential shall be not less than 220 °F (120 °C).
3. Clips shall be designed to allow for expansion and contraction of the roof relative to the structure throughout the temperature range specified above.
4. Resistance to wear through- An assembled specimen at least 3 panels wide spanning 3 or more supports with a 10-pound (4.5 kg) positive load on each clip shall be subjected to 100,000 cycles ½-inch (13 mm) in each direction for a total of 1-inch (25 mm) thermal movement. Upon completion, the panel shall show no signs of wear through from the top nor shall the contact surfaces between the clip and panel show any more than 25% loss in metal thickness. Laboratory test reports shall be independently certified (not by the manufacturer) by a registered professional engineer licensed to practice in any United States jurisdiction.

B. Uniform Wind Uplift Load Capacity.

1. Installed roof system shall withstand negative wind uplift pressures complying with the following criteria.
    1. Design Code: ASCE 7-16, Method 2 for Components and Cladding.

2. The ultimate capacity of the panel system shall be determined based on performance testing in accordance with ASTM E1592. The allowable load carrying capacity shall be calculated in accordance with AISI S100 section D6.2.1, except the provisions of Section D6.2.1a of Appendix A shall NOT be applicable for this project.
    1. Category III Building
    2. Wind Speed: 112 mph.
    3. Exposure Category: C.
    4. Mean Roof Height: 63 feet.
    5. Minimum Building Width: 74 feet.
    6. Roof Pitch: 4 inches per foot.

    Roof Area Negative Uplift Pressure:

    Zone 1 - Field of roof 44.2 psf.

    Zone 2 – Eaves and rakes 48 psf.

    Zone 3 – Corners 70.5 psf.

    The "a" dimension used to determine the width of roof zones 2 and 3 shall be 14'-10" feet.

C. Uniform Positive Load Capacity.
    1. Uniform positive load capacity shall be determined in accordance with AISI S100.
    2. The installed roof system shall be capable of resisting each of the following positive uniform roof loads: Roof Live Load of 20 psf
    3. Installed roof system shall carry positive uniform design loads with a maximum system deflection of L/180 as measured at the rib (web) of the panel.

D. Wind Uplift Classification: The panel system shall be listed as a Class 90 windstorm rated system, as determined by UL 580.

E. Fire Resistance Classification: The panel system shall be listed as a Class A Roof Covering, as determined by UL 790.

F. Air infiltration: The panel system shall be tested in accordance with ASTM E1680, and meet or exceed the following performance requirements:

Pressure	Area Leakage Rate
1.57 PSF	0.0010 cfm/sq.ft.
6.24 PSF	0.0020 cfm/sq.ft.
20.0 PSF	0.0032 cfm/sq.ft.

G. Static air pressure water infiltration: The panel system shall be tested in accordance with ASTM E1646, and meet or exceed the following performance requirements:

Pressure	Result
6.2 Gal/Hr per S.F. and Static Air Pressure of 20.0 psf for 15 minutes	No Leakage

H. Static water pressure head water infiltration.

1. The panel system shall be tested in accordance with ASTM E2140, and pass with no leakage. The test specimen must include a panel end lap condition and successfully withstand being submerged under 6" of water for 6 hours.

I. Dynamic pressure water penetration.

1. The panel system shall be tested in accordance with AAMA 501.1, and pass with no water penetration, other than condensation, when exposed to 8" per hour of dynamic rain and 77 mph wind velocities for not less than five (5) minutes duration. This pertains to the roof panel flashing components.

J. Class I Panel Rating: The specified panel system shall be listed as a Class I Panel Roof, in accordance with FM 4471. The tested system shall be identical to the specified panel for this project regarding profile, gauge, width, and material. The anchor clip spacing for this project name shall be based on E1592 requirements, but the clip spacing for roof zone 1 shall not exceed that of the FM 4471 test reports.

1.5 SUBMITTALS.

A. Shop drawings: Show roof panel system with flashings and accessories in plan view; sections and details. Include metal thicknesses and finishes, panel lengths, joining details, anchorage details, flashings and special fabrication provisions for termination and penetrations. Shop drawings to be prepared by metal roof panel manufacturer and shall include metal wall panels and metal coping.

B. Financial Certification: Provide the building owner with a signed and notarized (sealed) affidavit by an officer of the panel system manufacturer which confirms a current minimum corporate asset-to-liability ratio of not less than 3:1 for the panel manufacturer, or its parent corporation. Financial support information and affidavit must be dated within 30 days prior to the product submittal.

C. Design Test Reports.

1. Submit copies of design test reports for each of the performance testing standards listed in specification article 1.4. This shall be submitted with the contractors bid documents to establish submitted roof system meets all above requirements.

2. Test reports shall be performed by independent, accredited testing laboratories, and shall bear the seal of a registered professional engineer.

D. Warranty: Provide unexecuted specimen warranty documents for each warranty as required in specification article 1.10.

E. Samples.

1. Submit sample of panel section, at least 12-inch x 12-inch (305 mm x 305 mm) showing seam profile and a sample of color selected.
2. Submit sample of panel clip, gable clip, and preformed metal and foam closures.

1.6 FIELD INSPECTIONS

A. Roof panel manufacturer shall provide, at no additional cost to the owner, one day per week inspections. These inspections shall include a written report from the panel manufacturer. Inspections shall be conducted by a salaried employee of the roof panel manufacturer. Inspector shall be registered with the project architect prior to project commencement. Inspections conducted by roofing system distributors / dealers, or third parties will not be acceptable. The field inspector reserves the right to review and report to the project architect the level of acceptability of work completed and to subsequently issue a report of items not acceptable—if required.

1.7 QUALITY CRITERIA/INSTALLER QUALIFICATIONS.

A. Engage an experienced metal roofing contractor (erector) to install standing seam system who has a minimum of three (3) years' experience specializing in the installation of structural standing seam metal roof systems.

B. Contractor must be certified by manufacturer specified as a supplier of standing seam system and obtain written certification from manufacturer that installer is approved for installation of the specified system. Contractor will have attended the manufacturers training program for certification.

C. Successful contractor must obtain all components of roof system from a single manufacturer. Any secondary products that are required which cannot be supplied by the specified manufacturer must be recommended and approved in writing by primary manufacturer prior to bidding.

D. Fabricator/Installer shall submit work experience and evidence of adequate financial responsibility. Architect reserves the right to inspect fabrication facilities in determining qualifications.

E. Manufacturer shall provide 3 (three) inspections during the installation of the panel system. This shall be a direct employee of the manufacturer. Inspections shall be followed with a weekly documented report including pictures of work completed. Reports shall be submitted to the contracted installer of the roofing system.

1.8 DELIVERY, STORAGE, AND HANDLING.

A. Inspect materials upon delivery.

B. Handle materials to prevent damage.

C. Store materials off ground providing for drainage; under cover providing for air circulation; and protected from any debris.

1.9 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit metal roof panel work to be performed according to manufacturer's written instructions and warranty requirements.

B. Field Measurements: Verify actual dimensions of construction contiguous with metal roof panels by field measurements before fabrication.

1.10 COORDINATION

A. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

B. Coordinate metal roof panels with rain drainage work, flashing, trim, and construction of decks, purlins, rafters, parapets, walls and other adjoining work to provide a leak proof, secure, and noncorrosive installation.

1.11 WARRANTIES

A. Endorse and forward to owner the following warranties:

1. Manufacturer's standard 20-year NDL (no dollar limit) roof system weathertightness warranty, jointly signed by the installer and manufacturer. The warranty shall not place any limitations on wind speed, up to a maximum design wind speed as given in Article 1.4 of this specification.

2. Roof system warranty to include metal wall panels in specification section 074213 and metal coping in specification section 077100.

3. Manufacturer's standard 25-year finish warranty covering checking, crazing, peeling, chalking, fading, and adhesion of the pre-painted sheet metal materials.

4. Installer's 3-year warranty covering roof panel system installation and water-tightness.

B. Warranties shall commence on date of substantial completion.

PART 2 - PRODUCTS

2.1 PANEL MATERIALS

A. Painted, metallic-Coated Steel Sheet: Restricted flatness steel sheet metallic coated by the hot-dip process and pre-painted by the coil-coating process to comply with ASTM A755/A755M.

1. Recycled Content: Provide steel sheet with average recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content is at least 70 percent.

2. 24-gauge, Zinc-Coated (Galvanized) Steel Sheet, as per ASTM A653: G90 (Z275) coating designation; structural quality, minimum grade 40 ksi (275 MPa).
3. Texture: Smooth surface.
4. Exposed Coil-Coated Finish:
    1. 2-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Manufacturers' approved applicator to prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
    2. Coating system shall provide nominal 1.0 mil (0.025 mm) dry film thickness, consisting of primer and color coat.
    3. IMETCO Brite Copper.
5. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

C. Panel Sealants:

1. Seam Sealant: Factory applied hot melt, high viscosity, pressure sensitive adhesive with high heat resistance.
2. Sealant Tape: Non-curing, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, non-sag, nontoxic, non-staining tape 1-inch- (13-mm-) wide and 1/16-inch- (3-mm-) thick.
3. Exposed Sealant: ASTM C 920; elastomeric tri-polymer, polyurethane, or other advanced polymer sealant; of type, grade, class, and use classifications required to seal joints in metal roof panels and remain weathertight; and as recommended in writing by metal roof panel manufacturer.
4. Concealed Sealant: ASTM C 1311: Butyl-Based, Solvent-Release, One-Part Sealant.

2.2 FIELD-INSTALLED THERMAL INSULATION

A. Vinyl faced batt insulation: glass-fiber-blanket insulation; 0.5-lb/cu. ft. (8-kg/cu. m) density; 2-inch- (50-mm-) wide, continuous, vapor-tight edge tabs; and with a flame-spread index of 25 or less.

2.3 MISCELLANEOUS METAL FRAMING

A. Miscellaneous Metal Framing, General: ASTM C645, cold-formed metallic-coated steel sheet, ASTM A653, G90 (Z275) hot-dip galvanized.

B. Fasteners for Miscellaneous Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten miscellaneous metal framing members to substrates.

2.4 MISCELLANEOUS MATERIALS

A. Concealed fasteners: Corrosion resistant steel screws, #10 minimum diameter x length appropriate for substrate, hex washer head or pancake head. Use self-drilling, self-tapping for metal substrate or A-point for wood substrate.

B. Exposed fasteners: 3xx series stainless steel screws (cadmium or zinc coatings are not acceptable) with neoprene sealing washer, or 1/8-inch- (3-mm-) diameter stainless steel rivets.

2.5 STANDING-SEAM METAL ROOF PANELS

A. General: Provide factory-formed metal roof panels designed to be installed by lapping and interconnecting raised side edges of adjacent panels with joint type indicated and mechanically attaching panels to supports using concealed clips at side laps. Include clips, cleats and accessories required for weathertight installation.

1. Steel Panel Systems: Unless more stringent requirements are indicated, comply with ASTM E 1514.

B. Vertical-Rib, Standing-Seam Metal Roof Panels with field seamed panel legs. Formed with vertical ribs at panel edges and two intermediate pencil beads spaced between ribs; designed for installation by mechanically attaching panels to supports using concealed clips located under one side of panels and engaging opposite edge of adjacent panels.

1. Basis-of-Design System: Panel shall be IMETCO (Merchant & Evans) ZIP RIB roof panel system as manufactured by Innovative Metals Company, Inc. (IMETCO), Norcross, Georgia. 843.437.8632
2. Alternate manufacturers are subject to full compliance with specification requirements, have a minimum of 12 years manufacturing panel profile specified and shall be submitted for approval as follows:
    a. BEMO
    b. Centria SRS 3
3. Material and Finish: As indicated in specification article 2.1.
4. Characteristics:
    a. The same panel profile from a single manufacturer shall be used for ALL standing seam roof areas.

b. Configuration: Standing seams incorporating mechanically interlocked, concealed anchor clips which allow thermal movement.

1) Profile of panel shall have two stiffening beads equally spaced across the panel width.

2) Exposed fasteners, screws and/or roof mastic are unacceptable and will be rejected. System configuration only allows for exposed fasteners at panel overlap (if required and approved by architect) and trim details (as per manufacturer's guidelines).

3) Panels must be furnished in continuous lengths from eave to eave with no overlaps accepted. This applies to this application. Fixed point by panel clips will be done at the ridge area determined by panel manufacturer and noted on shop drawings.

c. Seam must be 2.5-inch (60 mm) minimum height for added strength for negative pressures design.

d. Panel seam shall contain a non-curing hot melt sealant concealed in the panel leg.

e. Panel seam shall be field crimped by means of an electric seaming tool to seal adjacent panels into a weathertight system, once installed. Installed panels seams shall be capable of being un-seamed by use of an electric "unzipping" tool. The un-seaming operation shall render each adjacent panel removable and reusable, without any permanent damage.

f. Concealed Standard Anchor Clips: Clips must be a two (2) piece sliding type with an 18-gauge (1.3 mm) galvanized steel base and 20-gauge (0.9 mm) galvanized steel top hook.

1) Clip must maintain a clearance of a minimum of 3/8-inch (9.5 mm) between panel and substrate for proper ventilation to help prevent condensation on underside of panel and eliminate the contact of panel fastener head to panel.

f. Standing Seam Panel Width: 16"

g. Panel ends shall be folded up 90 degrees at ridge, headwall, and hip conditions, where applicable. No metal shall be cut or otherwise perforated at the folded end.

2.6 ACCESSORIES

A. Roof Panel Accessories: Provide components approved by roof panel manufacturer and as required for a complete metal roof panel assembly including trim, copings, fasciae, corner units, ridge closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal roof panels unless otherwise indicated.

1. Closures: Provide closures at eaves and ridges, fabricated of same metal as metal roof panels.

2. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin-foam or closed-cell laminated polyethylene; minimum 1-inch- (25-mm-) thick, flexible closure strips meeting ASTM D1056 and/or D3575; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

3. Gable anchor clips: 18 gauge (1.3 mm) galvanized steel.

B. Flashing and Trim: Formed from same material and gauge as roof panels, prepainted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, eaves, rakes, corners, bases, framed openings, ridges, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal roof panels.

C. Gutters: Formed from same material roof panels. Match profile of gable trim, complete with end pieces, outlet tubes, and other special pieces as required. Fabricate in minimum 120-inch (3 m) long sections, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual." Furnish gutter supports spaced per SMACNA's recommendation based on gauge and stretch-out, fabricated from same metal as gutters. Finish gutters to match metal roof panels, roof fascia, and rake trim.

D. Downspouts: Formed from same material as roof panels. Fabricate in 120-inch-(3-m-) long sections, complete with formed elbows and offsets, of size and metal thickness according to SMACNA's "Architectural Sheet Metal Manual". Finish downspouts to match gutters.

E. Roof Curbs: Fabricated from same material as roof panels, minimum and welded top box and integral full-length cricket. Fabricate curb subframing of minimum 16-gauge- (1.5-mm-) thick, angle-, C-, or Z-shaped steel sheet. Fabricate curb and subframing to withstand indicated loads, of size and height indicated. Finish roof curbs to match metal roof panels.

2.7 FABRICATION

A. Fabricate and finish metal roof panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Fabricate metal roof panel seam with factory-installed hot melt, high viscosity, pressure sensitive adhesive with high heat resistance, in a manner that will seal weathertight.

D. Form flashing components from full single width sheet in minimum 120-inch (3 m) sections. Provide mitered corners, joined using closed end pop rivets and butyl-based, solvent released one-part sealant.

E. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Sealed Joints: Form nonexpanding but movable joints in metal to accommodate butyl-based sealant to comply with SMACNA standards.
3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
4. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA's "Architectural Sheet Metal Manual" or by metal roof panel manufacturer for application, but not less than thickness of metal being secured.

2.8 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - PREPERATION & EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal roof panel supports, and other conditions affecting performance of the Work.

B. Examine primary and secondary roof framing to verify that rafters, purlins, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal roof panel manufacturer.

C. Examine solid roof sheathing to verify that sheathing joints are supported by framing or blocking, and that installation is within flatness tolerances required by metal roof panel manufacturer.

D. Examine roughing-in for components and systems penetrating metal roof panels to verify actual locations of penetrations relative to seam locations of metal roof panels before metal roof panel installation.

E. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

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

3.2 PREPARATION

A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.

B. Establish straight, side and crosswise benchmarks

C. Use proper size and length fastener for strength requirements. Approximately 5/16-inch (8 mm) is allowable for maximum fastener head size beneath the panel.

D. Rectangular roofs shall be checked for square and straightness. Gable ends may not be straight; set a true line for the gable clips and flashing with string line.

E. Measure the roof lengthwise to confirm panel lengths, overhangs, coverage of flashings at eaves and ridges and verify clearances for thermal movement.

3.3 STANDING SEAM METAL ROOF PANEL INSTALLATION

A. All details will be shown on in accordance with approved shop drawings and manufacturer's product data, within specified erection tolerances.

B. Installation of Roof Panels: Unless alternate means are approved by the panel manufacturer, roof panels shall be installed by starting from one end and working towards the opposite end per manufacturer's installation guide.

1. Use three fasteners secured through the panel pan to permanently anchor the panel to the roof deck located at the ridge or head conditions. This is done at each panel along the ridge or head conditions.

    a. Fasteners are positioned behind the panel head closures to create a fixed panel point.

    b. Use a 3/8" shim underneath the panel to maintain a flat and level panel pan to prevent panel pan from being pulled out of plane.

    c. A hand crimping tool is used to crimp the cap around the top of two adjacent panels.

    d. Panel shall then be permanently seamed with manufacturer's mechanical seamer.

C. Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Use gasketed fasteners where required to prevent corrosive action between fastener, substrate, and panels.

D. Limit exposed fasteners to extent indicated on contract drawings.

E. Seal laps and joints in accordance with roofing system manufacturer's product data.

F. Coordinate flashing and sheet metal work to provide weathertight conditions at roof terminations. Fabricate and install in accordance with standards of SMACNA Manual.

G. Provide for temperature expansion/contraction movement of panels at roof penetrations and roof mounted equipment in accordance with system manufacturer's product data and design calculations.

H. Installed system shall be true to line and plane and free of dents, and physical defects. In light gauge panels with wide flat surfaces, some oil canning may be present. Oil canning does not affect the finish or structural integrity of the panel and is therefore not cause for rejection.

I. At joints in linear sheet metal items, set sheet metal items in two ¼-inch- (6-mm-) beads of butyl sealant. Extend sealant over all metal surfaces. Mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.

J. Remove damaged work and replace with new, undamaged components.

K. Touch up exposed fasteners using paint furnished by roofing panel manufacturer and matching exposed panel surface finish.

L. Clean exposed surfaces of roofing and accessories after completion of installation. Leave in clean condition at date of substantial completion. Touch up minor abrasions and scratches in finish.

3.4 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal roof panel units within installed tolerance of ¼-inch in 20-feet (6 mm in 6 m) on slope and location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect metal roof panel installation, including accessories. Report results in writing. Inspections shall occur 3 times per week by employee of the panel manufacturer. Reports shall be submitted to the roofing contractor compiled to weekly submission.

B. Remove and replace applications of metal roof panels where inspections indicate that they do not comply with specified requirements.

3.6 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal roof panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal roof panel installation, clean finished surfaces as recommended by metal roof panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal roof panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

SECTION 077100 – PREFORMED COPING

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. Work described in this section includes preformed metal coping system complete with fasteners, sealants, anchorage devices and other accessories as necessary to provide a complete metal edge system.

B. Metal wall panels (see specification section 074213).

C. Standing seam roof panels (see specification section 074113)

D. Related work specified elsewhere:

1. Structural steel.
2. Steel girts and furring.
3. Wood sheathing.
4. Rough carpentry.
5. Flashing and sheet metal.
6. Air barrier and vapor retarder.
7. Thermal insulation.
8. Sealants.

1.3 DEFINITIONS

A. American Architectural Manufacturer Association (AAMA):

1. AAMA 621-96: Voluntary/Standard Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates.
2. AAMA 2605-05: Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. American Society of Civil Engineers (ASCE):

1. ASCE 7-05: Minimum Design Loads for Buildings and Other Structures.

C. American Society for Testing and Materials (ASTM):

1. A653-03: Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. A755–03: Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products.
3. B209-02a: Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
4. D1056-00: Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
5. D3575-00e1: Standard Test Methods for Flexible Cellular Materials made from Olefin Polymers.

D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):

1. Architectural Sheet Metal Manual, 6th edition.

E. Single Ply Roofing Industry (SPRI)

1. ES-1 2003: Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems.

F. National Association of Architectural Metal Manufacturers (NAAMM)

1. Metal Finishes Manual for Architectural and Metal Products

1.4 DESIGN AND PERFORMANCE CRITERIA.

A. General Performance: Metal edge assemblies shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.

B. Thermal Expansion and Contraction.

1. Completed metal edge and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, or reducing performance ability.
2. The design temperature differential shall be not less than 220 degrees Fahrenheit.

C. Uniform Wind Load Capacity.

1. Installed metal edge system shall withstand negative wind pressures complying with the following criteria.
   a. Design Code: ANSI/SPRI ES-1.
   b. Safety Factor: 2.0.

2. The nominal capacity of the panel system shall be determined based on physical testing in accordance with ANSI/SPRI ES-1. The allowable load carrying capacity shall be calculated by reducing the calculated nominal capacity by the safety factor listed herein.

D. Metal thicknesses of exposed sheet metal components shall meet the requirements of ANSI/SPRI ES-1 Table 5.

1.5 SUBMITTALS.

A. Shop drawings: Show metal edge system with accessories and components in plan view, sections, and details. Include metal thicknesses and finishes, section lengths, joining details, anchorage details, flashings and special fabrication provisions for termination and penetrations. Indicate relationships with adjacent and interfacing work. Shop drawings to be prepared by metal edge system manufacturer and shall include metal roofing and metal wall panels.

B. Financial Certification: Provide the building owner with a signed and notarized (sealed) affidavit by an officer of the system manufacturer which confirms a current minimum corporate asset-to-liability ratio of not less than 3:1 for the system manufacturer, or its parent corporation. Financial support information and affidavit must be dated within 30 days prior to the product submittal.

C. Design Test Reports.

1. Submit copies of design test reports for each of the performance testing standards listed in specification article 1.4.

2. Test reports shall be performed by independent, International Accreditation Service, Inc. (IAS) accredited testing laboratory, and shall bear the seal of a registered professional engineer.

D. Warranty: Provide unexecuted specimen warranty documents for each warranty as required in specification article 1.10.

E. Samples.

1. Submit sample of metal edge section, at least 12 inches (305 mm) long showing profile with anchoring device(s), and also a sample of color selected.

1.6 QUALITY CRITERIA/INSTALLER QUALIFICATIONS.

A. Engage an experienced metal edge system contractor (erector) to install edge system who has a minimum of three (3) years' experience specializing in the installation of metal edge systems.

B. Contractor must be certified by manufacturer specified as a supplier of the metal edge system and obtain written certification from manufacturer that installer is approved for installation of the specified system.

C. Successful contractor must obtain all components of edge system from a single manufacturer. Any secondary products that are required which cannot be supplied by the specified manufacturer must be recommended and approved in writing by primary manufacturer prior to bidding.

D. Fabricator/Installer shall submit work experience and evidence of adequate financial responsibility. Architect reserves the right to inspect fabrication facilities in determining qualifications.

1.7 DELIVERY, STORAGE, AND HANDLING.

A. Inspect materials upon delivery.

B. Handle materials to prevent damage.

C. Store materials off ground providing for drainage; under cover providing for air circulation; and protected from any debris.

1.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit metal edge system work to be performed according to manufacturer's written instructions and warranty requirements.

B. Field Measurements: Verify actual dimensions of construction contiguous with metal edge by field measurements before fabrication.

1.9 COORDINATION

A. Coordinate sizes and locations of all work which interfaces with the metal edge system.

B. Coordinate metal edge system with rain drainage work, flashing, trim, and construction of other adjoining work to provide a leak proof, secure, and noncorrosive installation.

1.10 WARRANTIES

A. Endorse and forward to owner the following warranties:

1. Metal coping to be included with roof system warranty.

2. Manufacturer's standard 20-year finish warranty covering checking, crazing, peeling, chalking, fading, and adhesion of the painted sheet metal and/or extruded aluminum materials.

3. Installer's 3-year warranty covering metal edge system installation and watertightness.

B. Warranties shall commence on date of substantial completion.

PART 2 - PRODUCTS

2.1 PANEL MATERIALS

A. Painted, metallic-Coated Steel Sheet: Restricted flatness steel sheet metallic coated by the hot-dip process and pre-painted by the coil-coating process to comply with ASTM A755/A755M.

1. Recycled Content: Provide steel sheet with average recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content is at least 70 percent.

2. 24-gauge, Zinc-Coated (Galvanized) Steel Sheet, as per ASTM A653: G90 (Z275) coating designation; structural quality, grade 40 ksi (275 MPa).

3. Texture: Smooth surface.

4. Painted finishes shall be as specified in Article 2.2 A.

B. General Sealants:

1. Exposed Sealant: ASTM C 920; elastomeric tri-polymer, polyurethane, or other advanced polymer sealant; of type, grade, class, and use classifications required to seal joints in metal edge and remain weathertight; and as recommended in writing by metal edge system manufacturer.

2. Concealed Sealant: ASTM C 1311: Butyl-Based, Solvent-Release, One-Part Sealant.

3. Exposed Coil-Coated Finish:

a. 2-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Manufacturers' approved applicator to prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

b. Coating system shall provide nominal 1.0 mil (0.025 mm) dry film thickness, consisting of primer and color coat.

c. Basis of design color is IMETCO Brite Copper.

4. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

2.2 UNDERLAYMENT MATERIALS

A. Self-Adhering with reinforcing scrim, Vapor Impermeable, High-Temperature Sheet: 50-mils- (1.3-mm-) thick minimum, consisting of slip-resisting top surface laminated to SBS-modified asphalt adhesive, with release-paper backing; cold applied.

1. Thermal Stability: Stable after testing at 250 deg F (121 deg C); ASTM D 1970.
2. Low-Temperature Flexibility: Passes after testing at minus 20 deg F (29 deg C); ASTM D 1970.
3. Seams shall be lapped in accordance with manufacturer's recommendations.
4. Underlayment shall be approved for 90 days (minimum) of exposure to UV and weather penetrations.
5. Products: Subject to compliance with requirements, provide one of the following:

    a. Aqua Block 50 by IMETCO of Norcross, GA.

2.3 MISCELLANEOUS MATERIALS

A. Wood nailers shall be provided in accordance with project drawings and shall conform with ANSI/SPRI ES-1 requirements and metal edge system manufacturer's recommendations.

B. Concealed trim and flashing fasteners: Corrosion resistant steel screws, #10 minimum diameter x length appropriate for substrate, hex washer head or pancake head. Use self-drilling, self-tapping for metal substrate or A-point for plywood substrate.

C. Exposed trim and flashing: Pre-painted pan head or pancake head corrosion resistant coated or plated screws with neoprene sealing washer, or pre-painted 1/8-inch- (3-mm-) diameter stainless steel rivets.

2.4 METAL COPING SYSTEM

A. General: Provide factory-formed metal coping system designed to be field assembled by attaching anchoring chairs to parapet wall and engaging coping cover to anchoring chairs.

B. Concealed anchor chair coping system.

1. Coping system shall be IMETCO Performa Edge ES-C coping system as manufactured by Innovative Metals Company, Inc. (IMETCO), Norcross, Georgia.

2. Alternate manufacturers are subject to full compliance with specification requirements, and shall be submitted for approval as follows.
    a. Manufacturers not listed above must submit for approval, ten (10) days prior to bid date, the following: Manufacturer's literature; certification of testing in accordance with specification requirements and sections 1.4 and 1.5; sample warranties in accordance with specification section 1.10; installer qualifications in accordance with specification section 1.6, and a list of five (5) similar projects in size and scope of work.
    b. No substitutions will be permitted after the bid date of this project.
3. Material: Zinc-coated (galvanized) steel sheet, 0.023-inch (0.56-mm) nominal thickness.
4. Characteristics.
    a. Coping cover.
        1) Fabrication: Copings shall be factory formed from specified metal.
        2) Exposed front face dimension: 6 inches (152 mm). The peak of the coping cover, when installed, shall be 1-3/8 inches (35 mm) higher than the parapet top surface.
        3) Exposed rear face dimension: 4 inches (102 mm). The lower edge of the horizontal surface of the coping cover, when installed, shall be 3/4 inches (19 mm) higher than the parapet top surface.
        4) Length: 10 feet (3.05 m) maximum recommended length.
    b. Anchor chair.
        1) Anchor Chair: 16 inch (406 mm) long by 16-gauge galvanized steel x width as required for parapet wall.
        2) Anchor chairs shall be spaced at 60 inches (1,524 mm) on center.
    c. Coping system shall provide 5/8 inch (16 mm) of fall from front to rear to facilitate drainage and prevent water from ponding on top surface of coping cover.
    d. Anchor chair shall incorporate a sheet metal springing devise to allow coping cover to be rotated and snapped into place and secured without the use of exposed fasteners.
5. Internal splice plates shall be provided at coping cover joints. Splice plates shall be 6 inches (152 mm) wide and finished to match the coping cover.
6. Sealant Bead: Non-curing, 100 percent solids, polyisobutylene compound sealant bead. Provide permanently elastic, nonsag, nontoxic, nonstaining bead 5/16-inch- (8-mm-) diameter in accordance with coping system manufacturer's recommendations at all splices.

7. Fasteners: Attach anchor chairs using 1/4 inch x 1-1/4 inch (6 mm x 32 mm) long multi-purpose screws. Use two (2) screws at front face of anchor chair and two (2) screws on top horizontal surface of anchor chair.
8. Corners, tees, and other transitions shall be mitered, welded, and post-painted to match coping covers.
9. Radius (in plain view) copings, shall be factory formed by welding sheet aluminum sections and finishing with a post-applied finish as indicated in Article 2.2 B.
10. Arched (in elevation view) copings shall factory formed by welding sheet aluminum sections and finishing with a post-applied finish as indicated in Article 2.2 B. The profile of arched copings shall not have a drip edge or flat hem, and shall utilize a 1/8 inch (3 mm) stainless steel rivet painted to match the coping cover finish.

2.5 ACCESSORIES

A. Flashing and Trim: Formed from same material and gauge as wall panels, pre-painted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, head, sill, corners, jambs, framed openings, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal wall panels.

2.6 FABRICATION

A. Fabricate and finish metal edge system and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

B. Form flashing components from full single width sheet in minimum 10'-0" (3 m) sections. Provide mitered trim corners, joined using closed end pop rivets and butyl-based, solvent released one-part sealant.

C. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
2. Sealed Joints: Form nonexpanding but movable joints in metal to accommodate butyl-based sealant to comply with SMACNA standards.
3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.

4. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA's "Architectural Sheet Metal Manual" or by metal wall panel manufacturer for application, but not less than thickness of metal being secured.

2.7 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - PREPERATION & EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal edge system supports, and other conditions affecting performance of the Work.

B. Examine primary and secondary framing to verify that nailers, girts, studs, angles, channels, and other structural support members and anchorages have been installed within alignment tolerances required by metal edge system manufacturer.

C. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

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

3.2 PREPARATION

A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.

B. Establish straight, side and crosswise benchmarks

C. Use proper size and length fastener for strength requirements.

D. All surfaces shall be checked for square and straightness.

E. Measure the wall lengthwise and crosswise to confirm lengths, widths, and clearances of metal edge system components and verify clearances for thermal movement.

3.3 UNDERLAYMENT INSTALLATION

A. Sheet Underlayment: Apply primer if required by manufacturer. Comply with temperature restrictions of underlayment manufacturer for installation. Apply over entire parapet or roof-wall edge, wrinkle free, in shingle fashion to shed water, and with end laps of not less than 6 inches (150 mm) staggered 24 inches (610 mm) between courses. Overlap side edges not less than 3-1/2 inches (90 mm). Roll laps with roller. Cover underlayment within 90 days.

3.4 METAL EDGE SYSTEM INSTALLATION

A. All details will be shown on in accordance with approved shop drawings and manufacturer's product data, within specified erection tolerances.

B. Directly over the completed substrate, install metal edge system using specified fasteners and sealants. Fastener spacing for anchorage to structure shall be in accordance with manufacturer's shop drawings and as required for structural strength and serviceability.

C. Install metal edge system in strict compliance with manufacturer's written installation instructions.

D. Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Use gasketed fasteners where required to prevent corrosive action between fastener, substrate, and panels.

E. Limit exposed trim and flashing fasteners to extent indicated on contract drawings.

F. Seal laps and joints in accordance with system manufacturer's product data.

G. Coordinate flashing and sheet metal work to provide weathertight conditions at all terminations. Fabricate and install in accordance with standards of SMACNA Manual.

H. Provide for temperature expansion/contraction movement of elements at penetrations in accordance with system manufacturer's product data and design calculations.

I. Installed system shall be true to line and plane and free of dents, and physical defects. In light gauge elements with wide flat surfaces, some oil canning may be present. Oil canning does not affect the finish or structural integrity of the panel and is therefore not cause for rejection.

J. At joints in linear sheet metal items, set sheet metal items in two ¼-inch- (6-mm-) beads of butyl sealant. Extend sealant over all metal surfaces. Mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.

K. Remove damaged work and replace with new, undamaged components.

L. Touch up exposed fasteners using paint furnished by the panel manufacturer and matching exposed panel surface finish.

M. Clean exposed surfaces of metal edge system and accessories after completion of installation. Leave in clean condition at date of substantial completion. Touch up minor abrasions and scratches in finish.

3.5 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal elements within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) at location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect metal edge system installation, including accessories. Report results in writing.

B. Remove and replace applications of metal edge system where inspections indicate that they do not comply with specified requirements.

C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.7 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal edge system elements are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal edge system installation, clean finished surfaces as recommended by manufacturer. Maintain in a clean condition during construction.

B. Replace metal edge system elements that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

SECTION 074213 – METAL WALL PANELS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Work described in this section includes concealed clip, lap-seam pre-formed metal wall panel system complete with clips, perimeter and penetration flashing and closures.

B. Standing seam roof panels (see specification section 074113)

C. Coping (see specification section 077100).

D. Related work specified elsewhere:

1. Structural steel.
2. Steel girts and furring.
3. Wood sheathing.
4. Rough carpentry.
5. Flashing and sheet metal. (Not wall panel related).
6. Air barrier and vapor retarder.
7. Thermal insulation.
8. Sealants.

1.3 DEFINITIONS

A. American Architectural Manufacturer Association (AAMA):

1. AAMA 621-96: Voluntary/Standard Specifications for High Performance Organic Coatings on Coil Coated Architectural Hot Dipped Galvanized (HDG) & Zinc-Aluminum Coated Steel Substrates

B. American Iron and Steel Institute (AISI):

1. S100-07: 2007 Edition of the North American Specification for the Design of Cold-Formed Steel Structural Members.

C. American Society for Testing and Materials (ASTM):

1. A653-03: Specification for Steel Sheet, Zinc-coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
2. A755–03: Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Pre-painted by the Coil-Coating Process for Exterior Exposed Building Products.
3. A792-03: Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
4. B209-02a: Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
5. E283-04: Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

6. E331-00(2009): Standard Test Method for Water Penetration of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

D. Sheet Metal and Air Conditioning Contractors National Association (SMACNA):

1. Architectural Sheet Metal Manual, 6th edition.

E. National Association of Architectural Metal Manufacturers (NAAMM)

1. Metal Finishes Manual for Architectural and Metal Products

1.4 DESIGN AND PERFORMANCE CRITERIA.

A. General Performance: Metal wall panel assemblies shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.

B. Thermal Expansion and Contraction.

1. Completed metal wall panel and flashing system shall be capable of withstanding expansion and contraction of components caused by changes in temperature without buckling, or reducing performance ability.

2. The design temperature differential shall be not less than 220 degrees Fahrenheit.

3. Interface between panel and clip shall provide for unlimited thermal movement in each direction along the longitudinal direction.

C. Air Infiltration: Air leakage through assembly of not more than 0.06 cfm/sq. ft. (0.3 L/s per sq. m) of wall area when tested according to ASTM E 283 at the following test-pressure difference:

1. Test-Pressure Difference: 6.24 lbf/sq. ft. (300 Pa).

D. Water Penetration under Static Pressure: No water penetration when tested according to ASTM E 331 at the following test-pressure difference:

1. Test-Pressure with no leakage: 5 Gal/Hr per S.F. and Static Air Pressure of 20.0 psf (575 Pa) for 15 min.

1.5 SUBMITTALS.

A. Shop drawings: Show wall panel system with flashings and accessories in elevation, sections, and details. Include metal thicknesses and finishes, panel lengths, joining details, anchorage details, flashings and special fabrication provisions for termination and penetrations. Indicate relationships with adjacent and interfacing work. Shop drawings to be prepared by metal wall panel manufacturer and shall include metal roofing and metal coping.

B. Financial Certification: Provide the building owner with a signed and notarized (sealed) affidavit by an officer of the panel system manufacturer which confirms a current minimum corporate asset-to-liability ratio of not less than 3:1 for the panel manufacturer, or its parent corporation. Financial support information and affidavit must be dated within 30 days prior to the product submittal.

C. Design Test Reports.

1. Submit copies of design test reports for each of the performance testing standards listed in specification article 1.4.

2. Test reports shall be performed by independent, accredited testing laboratories, and shall bear the seal of a registered professional engineer.

D. Warranty: Provide unexecuted specimen warranty documents for each warranty as required in specification article 1.10.

E. Samples.

1. Submit sample of panel section, at least 6" x 6" showing seam profile with factory applied seam sealant, and also a sample of color selected.

2. Submit sample of panel clip and field applied sealants.

1.6 QUALITY CRITERIA/INSTALLER QUALIFICATIONS.

A. Engage an experienced metal wall panel contractor (erector) to install wall panel system who has a minimum of three (3) years' experience specializing in the installation of metal wall systems.

B. Contractor must be certified by manufacturer specified as a supplier of the metal wall system and obtain written certification from manufacturer that installer is approved for installation of the specified system.

C. Successful contractor must obtain all components of wall system from a single manufacturer. Any secondary products that are required which cannot be supplied by the specified manufacturer must be recommended and approved in writing by primary manufacturer prior to bidding.

D. Fabricator/Installer shall submit work experience and evidence of adequate financial responsibility. Architect reserves the right to inspect fabrication facilities in determining qualifications.

1.7 DELIVERY, STORAGE, AND HANDLING.

A. Inspect materials upon delivery.

B. Handle materials to prevent damage.

C. Store materials off ground providing for drainage; under cover providing for air circulation; and protected from any debris.

1.8 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit metal wall panel work to be performed according to manufacturer's written instructions and warranty requirements.

B. Field Measurements: Verify actual dimensions of construction contiguous with metal wall panels by field measurements before fabrication.

1.9 COORDINATION

A. Coordinate sizes and locations of windows, doors, and wall penetrations with actual equipment provided.

B. Coordinate metal wall panels with rain drainage work, flashing, trim, and construction of other adjoining work to provide a leak proof, secure, and noncorrosive installation.

1.10 WARRANTIES

A. Endorse and forward to owner the following warranties:

1. Metal wall panels to be included with roof system warranty.
2. Manufacturer's standard 20-year finish warranty covering checking, crazing, peeling, chalking, fading, and adhesion of the pre-painted sheet metal materials.
3. Installer's 3-year warranty covering wall panel system installation and watertightness.

PART 2 – PRODUCTS

2.1 PANEL MATERIALS

A. Painted, metallic-Coated Steel Sheet: Restricted flatness steel sheet metallic coated by the hot-dip process and pre-painted by the coil-coating process to comply with ASTM A755/A755M.

1. Recycled Content: Provide steel sheet with average recycled content such that postconsumer recycled content plus one-half of pre-consumer recycled content is at least 70 percent.
2. 24-gauge, Zinc-Coated (Galvanized) Steel Sheet, as per ASTM A653: G90 (Z275) coating designation; structural quality, grade 40 ksi (275 MPa).
3. Texture: Smooth surface.
4. Exposed Coil-Coated Finish:
   a. 2-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Manufacturers' approved applicator to prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.

b. Coating system shall provide nominal 1.0 mil (0.025 mm) dry film thickness, consisting of primer and color coat.

5. Concealed Finish: Apply pretreatment and manufacturer's standard white or light-colored polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil (0.013 mm).

B. Panel Sealants:

1. Seam Sealant: Factory applied hot melt, high viscosity, pressure sensitive adhesive with high heat resistance.

2. Sealant Tape: Non-curing, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1-inch- (13-mm-) wide and 1/16-inch- (3-mm-) thick.

3. Exposed Sealant: ASTM C 920; elastomeric tripolymer, polyurethane, or other advanced polymer sealant; of type, grade, class, and use classifications required to seal joints in metal wall panels and remain weathertight; and as recommended in writing by metal wall panel manufacturer.

4. Concealed Sealant: ASTM C 1311: Butyl-Based, Solvent-Release, One-Part Sealant.

2.2 MISCELLANEOUS METAL FRAMING

A. Miscellaneous Metal Framing, General: ASTM C 645, cold-formed metallic-coated steel sheet, ASTM A 653, G90 (Z275) hot-dip galvanized

B. Hat-Shaped, Rigid Furring Channels:

1. Nominal Thickness: As required to meet performance requirements
2. Depth: 7/8 inch (22 mm).
3. Top flange: 1-1/8 inches (28.5 mm) minimum

C. Fasteners for Miscellaneous Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten miscellaneous metal framing members to substrates.

2.3 MISCELLANEOUS MATERIALS

A. Miscellaneous Metal Framing, General: ASTM C 645, cold-formed metallic-coated steel sheet, ASTM A 653, G90 (Z275) hot-dip galvanized

B. Hat-Shaped, Rigid Furring Channels:

1. Nominal Thickness: As required to meet performance requirements
2. Depth: 7/8 inch (22 mm).
3. Top flange: 1-1/8 inches (28.5 mm) minimum

C. Fasteners for Miscellaneous Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten miscellaneous metal framing members to substrates.

2.4 METAL WALL PANELS

A. General: Provide factory-formed metal wall panels designed to be field assembled by interlocking seams incorporating concealed anchor clips, allowing thermal movement.

B. Concealed clip, interlocking flush seam wall panels.

1. Panel shall be IMETCO PermWall 1.0 system as manufactured by Innovative Metals Company, Inc. (IMETCO), Norcross, Georgia.

2. Alternate manufacturers are subject to full compliance with specification requirements, and shall be submitted for approval as follows.

a. Manufacturers not listed above must submit for approval, ten (10) days prior to bid date, the following: Manufacturer's literature; certification of testing in accordance with specification requirements and sections 1.4 and 1.5; sample warranties in accordance with specification section 1.10; installer qualifications in accordance with specification section 1.6, and a list of five (5) similar projects in size and scope of work.

b. No substitutions will be permitted after the bid date of this project.

3. Material: Zinc-coated (galvanized) steel sheet, 0.023-inch (24 gauge) nominal thickness. See 2.1 for finishes and color selection.

4. Characteristics.

a. Fabrication: Panels shall be factory formed from specified metal.

b. The standard profile shall be striated throughout the panel.

c. Panel orientation: Vertical.

d. Configuration: Panel shall be 13-inches- (330-mm-) wide nominal, with interlocking seams incorporating concealed anchor clips allowing thermal movement.

e. Panel Depth (Concealed Leg Height): 1 inch (25 mm), nominal.

f. Anchor clips: Clips shall be 22-gauge galvanized steel designed to allow thermal movement of the panel in each direction along the longitudinal dimension.

g. Panel length: Up to 20 feet (6.1 m) maximum recommended length.

2.5 ACCESSORIES

A. Flashing and Trim: Formed from same material and gauge as wall panels, pre-painted with coil coating. Provide flashing and trim as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, head, sill, corners, jambs, framed openings, fasciae, and fillers. Finish flashing and trim with same finish system as adjacent metal wall panels.

2.6 FABRICATION

A. Fabricate and finish metal wall panels and accessories at the factory to greatest extent possible, by manufacturer's standard procedures and processes and as necessary to fulfill indicated performance requirements. Comply with indicated profiles and with dimensional and structural requirements.

B. Provide panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel.

C. Form flashing components from full single width sheet in minimum 10'-0" (3 m) sections. Provide mitered trim corners, joined using closed end pop rivets and butyl-based, solvent released one-part sealant.

D. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.

1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.

2. Sealed Joints: Form nonexpanding but movable joints in metal to accommodate butyl-based sealant to comply with SMACNA standards.

3. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.

4. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA's "Architectural Sheet Metal Manual" or by metal wall panel manufacturer for application, but not less than thickness of metal being secured.

2.7 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 – PREPERATION & EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal wall panel supports, and other conditions affecting performance of the Work.

B. Examine primary and secondary wall framing to verify that girts, studs, angles, channels, and other structural panel support members and anchorages have been installed within alignment tolerances required by metal wall panel manufacturer.

C. Examine roughing-in for components and systems penetrating metal wall panels to verify actual locations of penetrations relative to seam locations of metal wall panels before metal wall panel installation.

D. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

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

3.2 PREPARATION

A. Clean substrates of substances harmful to insulation, including removing projections capable of interfering with insulation attachment.

B. Miscellaneous Framing: Install sub-framing, furring, and other miscellaneous wall panel support members and anchorage according to metal wall panel manufacturer's written instructions.

C. Establish straight, side and crosswise benchmarks

D. Use proper size and length fastener for strength requirements. Approximately 5/16 inch (8 mm) is allowable for maximum fastener head size beneath the panel.

E. All walls shall be checked for square and straightness. Inside and outside corners may not be plumb; set a true line for the corner flashing with string line.

F. Measure the wall lengthwise to confirm panel lengths and verify clearances for thermal movement.

3.3 METAL WALL PANEL INSTALLATION

A. All details will be shown on in accordance with approved shop drawings and manufacturer's product data, within specified erection tolerances.

B. Directly over the completed wall substrate, install one-piece clips. All anchor clips will be fastened into the structural wall substrate at 24-inches (600-mm) on center, maximum.

C. Installation of Wall Panels: Wall panels can be installed by starting from one end and working towards the opposite end.

D. Isolate dissimilar metals and masonry or concrete from metals with bituminous coating. Use gasketed fasteners where required to prevent corrosive action between fastener, substrate, and panels.

E. Limit exposed fasteners to extent indicated on contract drawings.

F. Seal laps and joints in accordance with wall panel system manufacturer's product data.

G. Coordinate flashing and sheet metal work to provide weathertight conditions at wall terminations. Fabricate and install in accordance with standards of SMACNA Manual.

H. Provide for temperature expansion/contraction movement of panels at wall penetrations and wall mounted equipment in accordance with system manufacturer's product data and design calculations.

I. Installed system shall be true to line and plane and free of dents, and physical defects. In light gauge panels with wide flat surfaces, some oil canning may be present. Oil canning does not affect the finish or structural integrity of the panel and is therefore not cause for rejection.

J. At joints in linear sheet metal items, set sheet metal items in two ¼-inch- (6-mm-) beads of butyl sealant. Extend sealant over all metal surfaces. Mate components for positive seal. Allow no sealant to migrate onto exposed surfaces.

K. Remove damaged work and replace with new, undamaged components.

L. Touch up exposed fasteners using paint furnished by the panel manufacturer and matching exposed panel surface finish.

M. Clean exposed surfaces of wall panels and accessories after completion of installation. Leave in clean condition at date of substantial completion. Touch up minor abrasions and scratches in finish.

3.4 ERECTION TOLERANCES

A. Installation Tolerances: Shim and align metal wall panel units within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) at location lines as indicated and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.5 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect metal wall panel installation, including accessories. Report results in writing.

B. Remove and replace applications of metal wall panels where inspections indicate that they do not comply with specified requirements.

C. Additional inspections, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.6 CLEANING

A. Remove temporary protective coverings and strippable films, if any, as metal wall panels are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of metal wall panel installation, clean finished surfaces as recommended by metal wall panel manufacturer. Maintain in a clean condition during construction.

B. Replace metal wall panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

SPECIAL INSTRUCTIONS TO BIDDERS:

1. All bidders are required to attend a pre-bid conference on February 19, 2026, at 2:00 p.m. which will be held in the Marshall County Commission Chamber on the 3rd floor of the Marshall County Courthouse located at 424 Blount Ave, Guntersville, AL 35976. Failure to attend the pre-bid conference will be cause for rejection of the bid. Any questions regarding the scope of work or to schedule an appointment to inspect the roof shall be directed to Chief Maintenance Supervisor, Brad Kilpatrick. He can be reached at (256) 264-3668.

2. A bid bond in the amount of 5% of the total bid cost shall be included with each bid submitted, but not to exceed $10,000.00.

3. A performance bond and payment bond each in the amount of 100% of the total bid price will be required within fifteen (15) days of the notice of award.

4. Contractor shall submit with bid a copy of a certificate of insurance ($1.0 million minimum) and workman's compensation.

5. The successful bidder shall begin work no later than 15 calendar days after date of notice to proceed.

6. Work is to be completed within 90 calendar days.

7. Should the contractor fail to complete the work within the time stipulated, a liquidated damage of $500.00 per calendar day shall be deducted from any monies due the contractor.

8. The Contractor shall include in his/her bid price the cost for all materials, labor, equipment, and incidentals necessary for the work to be completed in-place.

9. Payment will be made on a monthly basis for work completed. There will be retained five (5) percent of the amount of the work done and will be held until completion of all work and final acceptance by the Marshall County Commission. No further retainage will be held after 50 percent of work completed. Upon completion of all work the contractor must give notice of completion of the project by advertising in a local newspaper, and a release of lien. Advertisement must run for a period of four (4) consecutive weeks and provide the County with proof of advertising (affidavit) from the paper. Upon completion and acceptance of all work, final payment will be made.

10. The Contractor shall indemnify and save harmless Marshall County, Marshall County Commission, the officers and employees from all suits, actions, or claims of any character brought because of any injuries or damages received by any person, persons, or property on account of the said Contractor, or through use of unacceptable materials in constructing the work; or because of any claims or amounts arising or recovered under the "Workman's Compensation Act" or any other law, ordinance, order or decree.

11. It shall be the bidder's responsibility to possess all proper City, County, State, and Federal

licenses and shall familiarize himself with and shall comply with all Federal, State, and local laws, ordinances, and regulations.

12. By signing this contract the contracting parties affirm, for the duration of the agreement that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom.

Each bidder is required to submit with the bid a certificate of E-Verify.

13. Bids may be submitted either by mail or in person, however, Marshall County will not be responsible for the security of mailed bids. (Also, if mailing bid, please be advised that we do not receive mail before 10:00 A.M. daily, therefore mail early to ensure prompt arrival).

14. By signing and submitting of this bid, the vendor certifies that he/she is an equal opportunity employer.

15. Bidders are required to use this "*Invitation for Bids*". Bidders shall bid all items, sign, and return all sheets in the "*Invitation for Bids*" to ***Marshall County Engineering, 424 Blount Ave., Suite A337, Guntersville, AL 35976***. Failure to do so will be cause for rejection of bid.

16. **Each individual bid must be submitted in a sealed envelope with the word "BID" and name of item marked on outside of envelope, along with the contractor's license number.**

* *

You are invited to bid on the above specifications. Any substitutes offered, other than the items specified, must include information showing that the substitute is of equal or better quality and equally or better suited for the purported use than the item specified. The right to reject any items or materials not of quality or under any provisions of this act is reserved.

THE MARSHALL COUNTY COMMISSION RESERVES THE RIGHT TO ACCEPT AND/OR REJECT ANY AND/OR ALL BIDS.

JOHN YOUNG, CHAIRMAN
MARSHALL COUNTY COMMISSION