

ADDENDUM NO. 4

HERITAGE PARK BOARD Heritage Park Amphitheater

February 26, 2019

To: Planholders

From: Mote & Associates, Inc.
214 West Fourth Street
Greenville, Ohio 45331

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Re: Heritage Park Board
Heritage Park Amphitheater

This Addendum forms a part of the Contract Documents and modifies the original Contract Documents dated February 2019, Addendum No. 1 dated February 14, 2019, Addendum No. 2 dated February 19, 2019, and Addendum No. 3 dated February 21, 2019. Acknowledge receipt of this Addendum in the space provided on the Bid Proposal form. Failure to do so may subject the Bidder to disqualification.

CHANGES/CLARIFICATIONS TO THE BIDDING REQUIREMENTS:

1. ADVERTISEMENT FOR BIDS, Section 00 11 13

Due to the one week bid opening delay, the completion date for the project has also been extended for one week. The third paragraph, fourth sentence in the Advertisement for Bids shall be changed to read: ".....The Owner intends and requires that the project be completed no later than August 23, 2019." This date cannot be extended any further due to the Versailles Bicentennial Celebration scheduled for September at which time they intend to utilize the new amphitheater.

The change to the completion date shall also be revised in the following locations as appropriate:

Instructions to Bidders, Section 021 13, Article 10
Bid Form, Section 00 41 43, Article 6
Agreement, Section 00 52 43, Article 4
Notice to Proceed, Section 00 55 00
Summary, Section 01 10 00, Part 1.03

2. REVISED BID FORM #2, Section 00 41 43

The Base Bid for the project is hereby revised in accordance with the changes to the Construction Plans described herein. The Base Bid shall include tongue and groove wood plank structural decking and underlayment beneath the standing seam metal roof panels. A Revised Bid Form #2 is attached and shall be utilized with the Bid Package for a responsive Bid.

The Revised Bid Form #2 also allows for an Alternate Bid for Ribbed Metal Roof Panels in lieu of standing seam metal roof panels. This Alternate shall include deletion of the standing seam roof panels and deletion of the wood plank decking and include addition of ribbed metal roof panels complying with Technical Specification, Alternate Metal Roof Panels, Section 07 41 13 included with this Addendum.

The Alternate Metal Roof Panels shall include the underside of the roof panels finished to match the roof panel support structure. Bottom finish may be either factory finished or field painted. This Alternate Bid is optional and should the Bidder choose not to bid on this Alternate, they shall insert the words “No Bid” on the amount line.

CHANGES/CLARIFICATIONS TO THE TECHNICAL SPECIFICATIONS:

3. Add attached Technical Specification Section 07 41 13, Alternate Metal Roof Panels

CHANGES/CLARIFICATIONS TO THE CONSTRUCTION PLANS:

4. STRUCTURAL PLANS & NOTES, Drawing 6 of 10

Make the following change:

- a. Change Canopy Structure Note 3.b. to read as follows. “METAL ROOF PANELS, TONGUE AND GROOVE STRUCTURAL WOOD PLANK DECKING, FASTENING, CLOSURE PIECES, AND ACCESSORIES. COLORS WILL BE SELECTED BY THE OWNER. AS PART OF THE METAL ROOF PANEL ALTERNATE, DELETE THE STANDING SEAM ROOF PANELS AND DELETE THE WOOD PLANK DECKING AND ADD RIBBED ROOF PANELS COMPLYING WITH ATTACHED TECHNICAL SPECIFICATION SECTION 07 41 13, ALTERNATE METAL ROOF PANELS, WITH UNDERSIDE OF ROOF PANELS FINISHED TO MATCH THE ROOF PANEL SUPPORT STRUCTURE.

5. ELEVATIONS, Drawing 7 of 10

Make the following change:

- a. Change Keynote 20 to read as follows. CANOPY UNDERSIDE OF ROOF STRUCTURE SHALL BE DESIGNED TO PRECLUDE NESTING OF BIRDS. ALL EXPOSED PORTIONS OF COLUMNS AND ROOF DECK SUPPORT STRUCTURAL MEMBERS SHALL BE PAINTED, OWNER TO SELECT COLOR. ROOF STRUCTURE EDGES SHALL BE PAINTED OR PREFINISHED METAL. PROVIDE TONGUE AND GROOVE WOOD PLANK STRUCTURAL DECKING AND 30 POUND FELT OR EQUAL UNDERLAYMENT BENEATH THE STANDING SEAM ROOF PANELS. WOOD PLANKS SHALL BE THE STRUCTURE MANUFACTURER’S STANDARD TYPE FOR ARCHITECTURALLY EXPOSED CONDITION, STAINED TO COLOR SELECTED BY OWNER FROM MANUFACTURER’S STANDARD OPTIONS. FINISH SHALL MEET THE STRUCTURAL MANUFACTURER’S RECOMMENDATIONS FOR CLEAR FINISH FOR EXTERIOR APPLICATIONS. FINISH MAY BE EITHER FACTORY OR FIELD APPLIED. AS PART OF THE METAL ROOF PANEL ALTERNATE, DELETE THE STANDING SEAM ROOF PANELS AND DELETE THE WOOD PLANK DECKING AND ADD RIBBED ROOF PANELS COMPLYING WITH ATTACHED TECHNICAL SPECIFICATION SECTION 07 41 13, ALTERNATE METAL ROOF PANELS, WITH UNDERSIDE OF ROOF PANELS FINISHED TO MATCH THE ROOF PANEL SUPPORT STRUCTURE.

6. ELEVATIONS, Drawing 8R of 10

Make the following change:

- a. Change Keynote 33 to read as follows. CANOPY UNDERSIDE OF ROOF STRUCTURE SHALL BE DESIGNED TO PRECLUDE NESTING OF BIRDS. ALL EXPOSED PORTIONS OF COLUMNS AND ROOF DECK SUPPORT STRUCTURAL MEMBERS SHALL BE PAINTED, OWNER TO SELECT COLOR. ROOF STRUCTURE EDGES SHALL BE PAINTED OR PREFINISHED METAL. PROVIDE TONGUE AND GROOVE WOOD PLANK STRUCTURAL DECKING AND 30 POUND FELT OR EQUAL UNDERLAYMENT BENEATH THE STANDING SEAM ROOF PANELS. WOOD PLANKS SHALL BE THE STRUCTURE MANUFACTURER'S STANDARD TYPE FOR ARCHITECTURALLY EXPOSED CONDITION, STAINED TO COLOR SELECTED BY OWNER FROM MANUFACTURER'S STANDARD OPTIONS. FINISH SHALL MEET THE STRUCTURAL MANUFACTURER'S RECOMMENDATIONS FOR CLEAR FINISH FOR EXTERIOR APPLICATIONS. FINISH MAY BE EITHER FACTORY OR FIELD APPLIED. AS PART OF THE METAL ROOF PANEL ALTERNATE, DELETE THE STANDING SEAM ROOF PANELS AND DELETE THE WOOD PLANK DECKING AND ADD RIBBED ROOF PANELS COMPLYING WITH ATTACHED TECHNICAL SPECIFICATION SECTION 07 41 13, ALTERNATE METAL ROOF PANELS, WITH UNDERSIDE OF ROOF PANELS FINISHED TO MATCH THE ROOF PANEL SUPPORT STRUCTURE.

End of Addendum

Attachments: Revised Bid Form #2, Section 00 41 43
Technical Specification, Alternate Metal Roof Panels, Section 07 41 13

REVISED BID FORM #2

00 41 43

ARTICLE 1 - BID RECIPIENT

- 1.01 This Bid is submitted to: **[Heritage Park Board, c/o Mote & Associates, Inc., 214 West Fourth Street, Greenville, Ohio, 45331]**
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGEMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
 - A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified therein, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
_____	_____
_____	_____
_____	_____
 - B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially any Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially any Technical Data in such reports and drawings.
 - E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- J. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work as required.
- K. Bidder agrees that the Owner reserves the right to reject any or all bids, to waive any informalities or irregularities in the bids received, and to accept that bid which is considered lowest and to the best interest of the Owner.

ARTICLE 4 - BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any Bidders to submit a false or sham Bid;
- C. No person interested in this Proposal is directly or indirectly interested in or connected with any other bid or proposal for the said work and no member of the Heritage Park Board is directly or indirectly interested therein, or in any portion thereof, and he will, if required by the Heritage Park Board, execute and submit from himself as Principal Contractor and from any Subcontractor, the non-collusion affidavits as provided herein.
- D. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- E. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence participation in the bidding process or execution of the Contract.

ARTICLE 5 - BASIS OF BID

- 5.01 Bidder agrees that any item not specifically shown or called out on the plans or within the specifications, but is required to complete the work in place and fully operational shall be included in the Lump Sum Base Bid provided.
- 5.02 Bidder will complete the Work in accordance with the Contract Documents for the following price(s) and will contract to do all the work and furnish all the materials called for by said plans and specifications, and in consideration thereof, to accept from the Owner as full payment for the completion of all items and any required maintenance thereof as hereinafter provided, for the following prices that are accepted for one Contract as defined below;

Lump Sum Base Bid

Scope of Work: Bidder shall complete the Work in accordance with the Contract Documents and construction plans and will contract to do all the work and furnish all the tools, labor, and materials called for by said plans and specifications for the construction of the Heritage Park Amphitheater and related appurtenances to make fully operational for a lump sum price that will exclude the following Owner furnished products:

1. All aggregate required to construct Base Course and Engineered Fill indicated on the drawings to support the Raised Platform floor, the Storage Room floor, ramps, stairs, landings, sidewalks, and concrete paved seating and drive areas.
2. All concrete indicated for construction of the project.
 - a. Owner furnished concrete will include admixtures that may be necessary for conditions under which the concrete will be installed.
 - b. For all seating and drive area concrete, the concrete will include fiber mesh of the type recommended by the concrete supplier. Contractor shall take measures as recommended by the concrete supplier to ensure that the completed installation shall have no fibers visible at the surface of the concrete.
3. All steel reinforcement indicated to be placed in concrete and all steel reinforcement indicated to be placed in masonry, including both reinforcing bars and joint reinforcement.
 - a. Owner's vendor will furnish reinforcement placement drawings as specified in individual specifications sections for shop drawings.
4. The following masonry installation products.
 - a. All concrete block.
 - b. All masonry cement and mortar cement required for mortar and grout.
5. The following electrical products:
 - a. Service panelboard P1 and all of its internal components.
 - b. Transient voltage surge suppressor for the service panelboard.
 - c. All lighting fixtures and light poles.
 - d. Cabinets for the Lighting Control Panel and for the Sound System Panel.
 - e. All components to be installed within the Lighting Control Panel, to include at least 3 dimmers and two circuit control switches. Contractor shall mount all internal components provided and install wiring and terminations in this panel as directed by the supplier.
6. The following Surface Treatment Products:
 - a. Water Repellent for concrete block and;
 - b. Concrete Sealer for the Raised Platform floor.These products shall be applied at the rates and using the methods recommended in writing by the product manufacturers.

The material items listed will be provided to the project through the Owner and shall not be included in the Lump Sum Base Bid amount. Any coordination, incidentals and/or equipment necessary for the use and/or installation of the provided material(s) will be the responsibility of the Bidder and any associated cost shall be included in the Lump Sum Base Bid.

HERITAGE PARK AMPHITHEATER - BASE BID

<i>Bid Items:</i>	<i>Total Cost</i>
Lump Sum Bid for all Work shown within the construction plans and described in the Contract Documents to include a standing seam roof with underside finished wood plank decking, with the exception of the materials listed above, to make fully operational the Heritage Park Amphitheater.	\$
TOTAL AMOUNT OF LUMP SUM BASE BID: \$	

Total Amount of Lump Sum Base Bid:

_____ (in words)

The spacing of purlin members supporting the roof deck is _____ inches in the Base Bid.

ALTERNATE BID #1 – Storage Room

<i>Alternate Bid #1:</i>	<i>Total Cost</i>
Construction of Storage Room, including footing, foundation, floor, walls, doors, roof, and interior lighting and electric as per Section 01 23 00, Alternates, and as contained in the Contract Documents & Construction Drawings.	\$
ALTERNATE BID #1 ADDITION TO BASE BID:	\$

Total Amount of Alternate Bid #1:

_____ (in words)

ALTERNATE BID #2 – East Ramp

<i>Alternate Bid #2:</i>	<i>Total Cost</i>
Construction of east side access ramp to raised platform including slab, curb wall, railing, and granular fill placement as per Section 01 23 00, Alternates, and as contained in the Contract Documents & Construction Drawings.	\$
ALTERNATE BID #2 ADDITION TO BASE BID:	\$

Total Amount of Alternate Bid #2:

(in words)

ALTERNATE BID #3 – Sod in lieu of Seeding/Mulching

<i>Alternate Bid #3:</i>	<i>Total Cost</i>
Additional cost to provide sod in lieu of seeding & mulching for restoration of areas disturbed during construction.	\$
ALTERNATE BID #3 ADDITION TO BASE BID:	\$

Total Amount of Alternate Bid #3:

(in words)

ALTERNATE BID #4 – Metal Roof Panel Alternate

<i>Alternate Bid #3:</i>	<i>Total Cost</i>
Use of metal roof panels per Section 07 41 13, Metal Roof Panels with the underside finished to match panel support structure. Include the deletion of standing seam roof panels and wood plank decking. Indicate on the line below if the amount is an "Add" or "Deduct" to the Base Bid.	\$
ALTERNATE BID #4 * _____ TO BASE BID: (*Place Add or Deduct on line above)	\$

Total Amount of Alternate Bid #3:

(in words)

The spacing of purlin members supporting the roof deck is _____ inches for the Metal Roof Panel Alternate.

Bidder acknowledges that:

(1) If this Proposal shall be accepted, Bidder will be prepared to discuss with the Heritage Park Board in detail any matters relating to special features and the methods proposed to be followed for the general conduct of the work, that within ten (10) days after "Notice of Award" the Contract Form with the Heritage Park Board for performance of the work will be completed and Bidder will furnish a Contract Bond in an amount not less than one hundred percent (100%) of the total bid amount, and with sureties subject to the approval of the Heritage Park Board as a guarantee of the faithful performance of this Contract; and that Bidder will also submit the required insurance certificates.

ARTICLE 6 - TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before August 23, 2019.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages in the amount of \$1,000.00 for every consecutive day after the stated date in the Notice to Proceed and along with any time extension given per a Change Order and it may be retained from the monies which may be due.

ARTICLE 7 - ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Required bid security accompanies this Proposal and the undersigned agrees that should he, after notice of "Award of Contract" fail to execute the Contract and Contract Bond as aforesaid, that his Certified Check or Bid Bond accompanying this Proposal shall be forfeited to the Heritage Park Board as liquidated damage caused by such failure.
 - B. Affidavit for Corporation;
 - C. Required Bidder Qualification Statement with supporting data;
 - D. List of Proposed Subcontractors; and
 - E. Non-Collusion Affidavit.

ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

Federal ID No.:

By: *[Signature]*

Date:

[Printed name]

(If Bidder is a corporation, limited liability company, partnership or joint venture, attach evidence of authority to sign.)

Address for giving notices:

Telephone Number:

Fax Number:

Contact Name and e-mail address:

ALTERNATE METAL ROOF PANELS
07 41 13

PART ONE – GENERAL

1.01 Performance Requirements

- A. General Performance: Metal panels shall comply with performance requirements without failure due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Water Penetration: No water penetration when tested according to ASTM E 1646 at the following test-pressure difference:
 - 1. Test-Pressure Difference: 20 percent of positive design wind pressure, but not less than 6.24 lbf/sq. ft. (300 Pa) and not more than 12.0 lbf/sq. ft. (575 Pa).
- C. Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for wind-uplift-resistance class indicated.
 - 1. Uplift Rating: UL 90.
- D. Thermal Movements: Allow for thermal movements resulting from ambient and surface temperature changes. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F material surfaces.

1.02 Submittals

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

1.03 Delivery, Storage, and Handling

- A. Deliver components, sheets, metal panels, and other manufactured items so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
- B. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
- C. Stack metal panels on platforms or pallets, covered with suitable weathertight and ventilated covering. Store metal panels to ensure dryness. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.

1.04 Project Conditions

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

1.05 Warranty

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace metal roof panel assemblies that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a) Structural failures including rupturing, cracking, or puncturing.
 - b) Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Ten years from date of Substantial Completion.

PART TWO - PRODUCTS

2.01 Panel Materials

- A. Metallic-Coated Steel Sheet: Restricted flatness steel sheet metallic coated by the hot-dip process and prepainted by the coil-coating process to comply with ASTM A 755/A 755M.
 - 1. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40 (Class AZM150 coating designation, Grade 275); structural quality, or equal.
 - 2. Surface: Smooth, flat finish.
 - 3. Exposed Coil-Coated Finish: Kynar 500 or equal.
- B. Panel Sealants:
 - 1. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.

2.02 Miscellaneous Materials

- A. Panel Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Provide exposed fasteners with heads matching color of metal roof panels by means of plastic caps or factory-applied coating. Provide EPDM, PVC, or neoprene sealing washers.

2.03 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; cut or premolded to match metal roof panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.

3. Backing Plates: Provide metal backing plates at panel end splices, fabricated from material recommended by manufacturer.

2.04 Fabrication

- A. Fabricate and finish metal 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 panel side laps with factory-installed captive gaskets or separator strips that provide a tight seal and prevent metal-to-metal contact, in a manner that will seal weathertight and minimize noise from movements within panel assembly.
- D. Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of item indicated.
 1. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
 2. End Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
 3. End Seams for Other Than Aluminum: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
 4. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
 5. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.

2.05 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 THREE - EXECUTION

3.01 Metal Panel Installation, General

- A. Provide metal panels of full length from top to bottom unless otherwise indicated or restricted by shipping limitations.
- B. Install metal panels as follows:
 - 1. Field cutting of metal panels by torch is not permitted.
 - 2. Install panels perpendicular to purlins or girts.
 - 3. Locate and space fastenings in uniform vertical and horizontal alignment.
 - 4. Flash and seal metal roof panels with weather closures at eaves, rakes, and perimeter of all openings.
 - 5. Install metal flashing to allow moisture to run over and off metal roof panels.
- C. Fasteners:
 - 1. Steel Panels: Use stainless-steel fasteners.
- D. Anchor Clips: Anchor metal panels and other components of the Work securely in place, using manufacturer's approved fasteners according to manufacturers' written instructions.
- E. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of metal panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not indicated, types recommended by metal roof panel manufacturer.
 - 1. Seal metal panel end laps with double beads of tape or sealant, full width of panel. Seal side joints where recommended by metal roof panel manufacturer.

3.02 Metal Panel Installation

- A. Lap-Seam Metal Panels: Fasten metal panels to supports with fasteners at each lapped joint at location and spacing recommended by manufacturer.
 - 1. Apply panels and associated items for neat and weathertight enclosure. Avoid "panel creep" or application not true to line.
 - 2. Fasteners may be either exposed or concealed.

3.03 Accessory Installation

- A. General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.
 - 1. Install components required for a complete metal panel assembly including trim, copings, ridge closures, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

1. Install exposed flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.

3.04 Erection Tolerances

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

3.05 Cleaning

- A. Remove temporary protective coverings and strippable films, if any, as metal 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.

END OF SECTION