

ADDENDUM NO. 1
July 30, 2019
125139

RE: GREATER UPPER VALLEY SOLID WASTE MANAGEMENT DISTRICT, HARTLAND, VT
TRANSFER STATION FACILITY

FROM: DuBOIS & KING, INC.
28 North Main Street
Randolph, Vermont 05060
(802) 728-3376

TO: Prospective Bidders

This Addendum forms part of the Contract Documents by the Greater Upper Valley Solid Waste Management District (GUV) for the Transfer Station Facility. Acknowledge receipt of this Addendum in the proposal. Failure to do so will subject the Bidder to disqualification.

I. Pre-Bid Meeting

A Pre-Bid meeting was held at the Project Site on July 24, 2019 at 10:00 a.m. Attendees are listed on the attached Pre-Bid Meeting Attendance Log (Attachment A). Tom Kennedy of GUV gave a brief introduction to the project and discussed the drivers behind it. Christopher J. Rivet, P.E., of DuBois & King, Inc. described key elements of the project. The following addresses questions received at the pre-bid meeting and additional information and clarifications.

II. Questions & Answers

Question 1: Have all the necessary permits been submitted for this project?

Answer 1: The application for the Operational Stormwater Permit, Construction General permit, Act 250 permit, Solid Waste permit, and Water & Wastewater permit for this project have been submitted. The final permit that will need to be submitted is the Fire Safety Permit. It is anticipated that the necessary permits should be approved by September 1, 2019.

Question 2: What are the project completion dates? Are there liquidated damages if construction extends beyond the completion dates?

Answer 2: Substantial completion is set for November 29, 2019 and final completion is set for December 13, 2019.

The liquidated damages listed in the contract are \$250 per calendar day beyond substantial and final completion.

Question 3: The schedule is very tight and will be difficult to meet. If we submit Bid Bonds with our bid, we will be committing to a schedule that we may not be able to meet.

Answer 3: The Owner understands that the schedule is very tight. The reason for this is to stress the urgency in which the project should be completed. It is the desire of the Owner to

have the project operational for the winter months, rather than waiting until the spring to be operational.

We are not going to adjust the substantial and final completion dates at this time. However, in order to complete the project, the Owner is willing to work with the Contractor on any scheduling concerns.

Question 4: Are there contaminated soils on site? Also, will there be a designated area at the transfer station facility to dispose excavated soils?

Answer 4: No soil analyses have been conducted to identify potentially contaminated soils. However, we do not anticipate the presence of contaminated soils at the site.

There will be enough space at the Transfer Station Facility to dump excess soils and debris, if needed.

Question 5: What is the current estimate of this project?

Answer 5: The preliminary estimate for the project was \$400,000. The current base estimate by D&K, not including alternate bid items, is \$545,000. The Owner has expressed concern about funding the Project at the base estimate and has requested that value engineering be applied into the Contractor's bid estimate. Please identify the items with which value engineering is applied and the methods used.

Question 6: Can the site be cleared and prepared before the permits have been approved for construction?

Answer 6: Initial site preparation (clearing and grubbing) should not be performed prior to the issuance of the Construction General Permit. Site preparations may be performed prior to other permits being issued, such as the Operational Stormwater, Act 250, or Fire Safety Permits.

Question 7: Are there any wage rates required for this project; Davis Bacon, etc.?

Answer 7: There are no wage rate requirements.

Question 8: Note 1 under the Codes & Permits section on Sheet 2 of the Bid Plans states "*The Contractor shall be the Co-Permittee and shall be responsible for obtaining any necessary permits prior to construction.*" Does that mean the contractor needs to be a co-permittee for all of the permits that are listed? Construction General Permit, Operational Stormwater Permit, Solid Waste Permit, etc.? Do we need to get all the permits? I thought the Owner was applying for the permit?

Answer 8: The Owner has submitted permit applications to obtain the permits necessary to construct the project. The Contractor does not need to be a co-permittee for all of the listed permits. The Contractor will be required to obtain co-permittee status for the Construction General Permit only.

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Question 9: There is no reference to electrical service for the scale, scale house, or water supply well on the plans. Should electrical service be included with this project? What type of power supply would be required?

Answer 9: The installation of electrical service to the site is not included in this project. It is the Owner's intention to install the electric service to the site under a separate contract.

III. Additional Information/Clarifications

- a. Attached is the Specification for the Pre-Engineered Metal Building (Attachment B).
- b. Additional communications should go through Christopher Rivet (crivet@dubois-king.com).

This document constitutes Addendum 1 for this project.

PRECONSTRUCTION CONFERENCE

Attachment A

GREATER UPPER VALLEY SOLID WASTE MANAGEMENT DISTRICT
TRANSFER STATION FACILITY
125139

July 24, 2019

10:00 a.m.

ATTENDANCE LOG

(Please Print)

NAME	AFFILIATION & TITLE	PHONE #	E-MAIL ADDRESS
SPENCER ZALIB	ESTES & GALLUP P.M.	603 795 4400	SZALIB@ESTES-GALLUP.COM
William Grady	Upland Const. P.M.	802 952-8408	Grady@uplandconstruction.com
Paul Wyncoop	Bread Loaf Corp	802 388 9871	pwyncoop@breadloaf.com
Ryan Mohse	LTM Service Contractors	603-359-1956	Ryan@LTMhanovert.com
Luke Willey	Willey Earthmoving	802-674-2500	willeyearth@gmail.com
TJ Kingsbury	KINGSBURY Co	802-496-2205	estimating@Kingsburyc.com
Dave Dancoffe	All Seasons Construction	802-885-5722	ddancoffe@allseasonsconst.com
Shawn Rollard	Crown Point Excavation LLC	802-291-4817	crownpointexcavation@yahoo.com
CALL LAMALLEE	WRIGHT CONSTRUCTION	802.259.2094	CALLAMALLEE@WRIGHTCONSTRUCTION.COM
RECK CROSS	"	"	RECKROSS@WRIGHTCONSTRUCTION.COM

SECTION 133419

PRE-ENGINEERED METAL BUILDING

PART 1 GENERAL

1.01 PRODUCTS FURNISHED BUT NOT INSTALLED UNDER THIS SECTION

- A. Anchor Bolts and Tie Rods: Installed under the work of Section 03300.
- B. Embedded Sill Members: Installed under the work of Section 03300.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Cast-In-Place Concrete: Section 03300

1.03 REFERENCES

- A. Reference Standards: Comply with the following as applicable:
 - 1. Design, Fabrication and Erection: "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings" and the "Code of Standard Practice For Steel Buildings and Bridges" by the American Institute of Steel Construction (AISC Specification and Code).
 - 2. Design and Fabrication of Cold-formed Steel Structural Members: "Specification for the Design of Cold-Formed Steel Structural Members" by the American Iron and Steel Institute (AISI Specification).
 - 3. Welding: Comply with the provisions of the "Structural Welding Code - Steel, AWS D1.1" or the "Structural Welding Code - Sheet Steel, AWS D1.3", by the American Welding Society (AWS Codes).
 - 4. High-Strength Bolting: Provide high strength bolting in accordance with the "Specification for Structural Joints Using ASTM A325 or A490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation on August 14, 1980 except as follows:
 - a. Item 1(c): Wind connections and all other connections transferring moment shall be included among the connections limited to friction-type.
 - b. Item 5(b): All high strength bolts shall have a hardened washer under the element (nut or bolt head) turned in tightening, regardless of the method of tightening.
 - c. Item 6: The inspection of bolt tightening shall be as specified under Item 6(d). Furnish the calibration device and the inspection torque wrench, and make them available, upon request, to representatives of the State or designated inspection laboratory during the entire period when steel is being fabricated and erected. The inspection torque wrench shall be capable of indicating that the job inspecting torque has been

reached by a second method in addition to direct observation of the wrench dial. The inspection wrench calibration and the bolt tightening inspection shall be performed by the Contractor, and shall be witnessed by a representative of the Engineer or the designated inspection laboratory.

5. Clevises, Turnbuckles, and Sleeve Nuts: Comply with the "Steel Construction Manual" by The American Institute of Steel Construction (AISC Manual).
6. Gages:
 - a. Sheet Steel: U.S. Standard.
 - b. Steel Wire: U.S. Steel Wire Gage.

1.04 DESIGN REQUIREMENTS

- A. Design Criteria: Except as shown or specified otherwise, building design shall conform to the Metal Building Manufacturers Association's (MBMA) "Design Practices" and "Code of Standard Practice", and with the following criteria:
 1. Wind Loading: $q_s=34$ lb/sq ft, minimum, on the vertical building projection.
 2. Roof Snow Loading: 42 lb/sq ft, minimum, on the horizontal projection of the building roof.
 3. Wind Uplift Loading: Positive Internal = -33.5 lb/sq ft, minimum, and Negative Internal = -11.2 lb/sq ft, minimum, on the horizontal projection of the building roof.
 4. Design load reductions based on tributary loaded area shall not be used.
 5. Roof System Uplift Rating: UL Class (TBD) wind uplift resistance rating.
 6. Exterior Wall and Roof System Deflection: Withstand imposed loads with maximum span deflection of L/240.
 7. Building Size: Not less than the size indicated on the Drawings.
 - a. Actual building length shall be to the inside face of exterior end wall panels and shall be equal to the nominal building length.
 - b. Actual building width shall be to the inside face of exterior side wall panels and shall be equal to the nominal building width.
 8. Column Fire Rating: (TBD) hour.
 9. Grounding: Building shall be grounded.

1.05 SUBMITTALS

- A. Shop Drawings: Drawings shall show specific application to this Project. Submit all required drawings in one submission, except as noted.
 1. Erection Drawings: Manufacturer's complete erection drawings. Indicate manufacturer's identification marking for the components.
 2. Structural Drawings:
 - a. Manufacturer's drawings showing base plate dimensions and foundation loads for all columns and/or rigid frames.
 - b. Manufacturer's drawings showing anchoring details for the sill members, door jambs, and other miscellaneous items requiring connections to the concrete foundation.

- c. Manufacturer's details for any proposed wall wind bracing system other than portal columns as shown.
- d. Foundation drawings showing dimensions and elevations of all piers, walls, and footings required.
- e. Anchor bolt plan showing the location of all columns and/or rigid frames, and the location of all necessary anchor bolts or other main framing connections to the concrete foundation.
- f. Anchor bolt and tie rod details.

Note: Drawings required under 2.d., 2.e., and 2.f. shall not be submitted until the manufacturer's drawings required under 2.a., 2.b., and 2.c. have been approved.

Note: Manufacturer's standard sheets showing loads or details for a multiple range of building spans, heights, and loadings will not be accepted.

- 3. Architectural Drawings: Architectural detail drawings for all auxiliary building components and accessories.

B. Product Data: Manufacturer's catalog sheets, specifications and installation instructions for the following:

- 1. Roofing panels.
- 2. Exterior wall panels.
- 3. Interior liner panels.
- 4. Doors.
- 5. Trim, exterior and interior.
- 6. Flashings.
- 7. Sealants and gaskets.

C. Samples:

- 1. Twelve inch square corner sections:
 - a. Roofing panel.
 - b. Exterior wall panel.
 - c. Interior liner panel.
- 2. Color Samples: Manufacturer's standard colors for exterior wall and roofing panels, trim, and other factory color-coated components.
 - a. Standard colors for translucent light panels.

D. Quality Control Submittals:

- 1. Design Calculations: Manufacturer's design calculations, signed and sealed by a licensed Professional Engineer, for the structural framing and exterior wall and roofing panels.
 - a. The Engineer's cover letter shall state that he or she has received a set of the Contract Drawings and Specifications and that the design calculations are based on the requirements of the Contract Drawings and Specifications.
- 2. Certificates: Metal building manufacturer's written certification that the structure has been designed in conformance to the specified design

loading and other design requirements. Note: This is a pre-award submittal; refer to Supplementary Instructions to Bidders - Condition of Award.

- E. Contract Closeout Submittals:
 - 1. Warranties:
 - a. Roofing Panels: Metal building manufacturer's (TBD) year warranty on roofing panels and related trim against rupture, structural failure, or perforation due to atmospheric corrosion.
 - b. Exterior Wall Panels: Metal building manufacturer's (TBD) year warranty for factory applied color finish on exterior surfaces of exterior wall panels and related trim against blistering, peeling, cracking, flaking, checking, chipping, color change exceeding 5 N.B.S. units (per ASTM D-2244), and chalking exceeding a rating of 8 (per ASTM D-659).

1.06 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: The manufacturer of the pre-engineered metal building shall be regularly engaged in the design and fabrication of pre-engineered, pre-fabricated metal buildings, shall have furnished such buildings for five similar projects that have been in use for not less than five years, and shall be subject to the approval of the Engineer. The building manufacturer shall be capable of furnishing compatible auxiliary building components and accessories shown or specified.
 - 1. If requested, furnish to the Engineer the names and addresses of five similar projects where the manufacturer's building has been in use for five years.
- B. Installer's Qualifications: The person supervising the installation of the work of this Section shall be experienced in pre-engineered metal building work, and shall have been regularly employed by a company engaged in the erection and installation of such buildings for a minimum of three years.
 - 1. If requested, furnish to the Engineer the names and addresses of three similar projects for which the supervisor has supervised the erection and installation of pre-engineered metal buildings.
- C. Regulatory Requirements:
 - 1. Code: Comply with the applicable provisions of the State of Vermont Fire and Building Safety Code.
 - 2. Column Fire Rating: Comply with the applicable specifications and details of Underwriters Laboratories, Inc.
 - 3. Building Grounding: Comply with National Electrical Code.
- D. Inspection: Quality assurance inspection may be made by the State. If quality assurance inspection is made by the State, it shall not relieve the fabricator or erector of responsibility for their own quality control program.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver building components, except structural steel, to the Site in unopened cartons, crates, or other protective containers bearing the manufacturer's labels.
- B. Components shall have manufacturer's identification marking corresponding to the marking shown on the erection drawings.
- C. Keep materials dry while in storage.
- D. Handle materials by a method which will prevent damage to components, including finishes.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Basic Materials: Except as otherwise specified or indicated on the Drawings, building components and assemblies shall be fabricated from the following applicable materials as required to produce units conforming to the design and types of fabrications required for the building.
 - 1. Structural Steel Members: ASTM A36, A529 or A572 except as otherwise indicated.
 - 2. Cold-Rolled Structural Steel: ASTM A446, Grade A except higher strength grade if needed to comply with design criteria.
 - 3. Cold-Formed Structural Steel: ASTM A570.
 - 4. Structural Steel Tubing: ASTM A500, Grade B or A501.
 - 5. Steel Plate and Bar Stock: ASTM A529 or A572.
 - 6. Steel Pipe: ASTM A53, type and weight as required, Grade B.
 - 7. Anchor Bolts and Tie Rods: ASTM A36 or A675, Grade 70.
 - 8. Clevises, Turnbuckles, and Sleeve Nuts: Similar to those shown in Part 4 of the AISC Manual. The safe working loads shall be adequate for the building furnished.
 - 9. High Strength Bolts: ASTM A325.
 - 10. Common (Standard) Bolts: ASTM A307.
 - 11. Steel for Shims and Fillers: ASTM A569.
 - 12. Welding Materials: AWS Codes, type required for materials being welded.
 - 13. Covering Fasteners:
 - a. Screw Bolts: Type 300 series stainless steel capped low profile head, 200 inch lb min stripping tongue, color finish on exposed exterior surfaces matching adjacent panels/trim.
 - b. Sheet Metal Screws: Type 300 series stainless steel or ASTM A165 cadmium plated case hardened carbon steel, self-drilling or self-tapping, standard hexagonal head or hex-washer head, color finish on exposed exterior surfaces matching adjacent panels/trim.

- c. Rivets: Aluminum, pull type, self-petalling, 1400 lb setting strength, 1650 lb shear strength, 350 lb min push out strength, color cap on exposed exterior surface matching adjacent panels/trim.
 - d. Sealing Washers: Neoprene washers, ASTM D735.
 - 14. Shop Primer Paint for Framing: Equal performance requirements of FS TT-P-636 or TT-P-664.
 - 15. Cold Galvanizing Compound: Single component compound giving 93 percent pure zinc in the dried film, and complying with DOD-P-21035A (NAVY).
 - 16. Bituminous Paint: Asphaltic type, SSPC - Paint 12.
 - 17. Bedding Mortar:
 - a. Shrink-Resistant Grout: Factory-packaged, shrink-resistant, non-staining, non-ferrous mortar grouting compound selected from the following:
 - 1) Masterflow 713 by Master Builders.
 - 2) SonogROUT by Sonneborn.
 - 3) Five Star Grout by U.S. Grout Corporation.
 - 4) Crystex by L&M Construction Chemicals.
 - 5) Non-Corrosive, Non-Shrink Grout by A.C. Horn.
- B. Assembly and Installation Accessories: Building manufacturer's standard reinforcements, extensions, clips, brackets, miscellaneous fasteners and anchoring devices, spacers, furring strips, closures, flashings, expansion joints, thermal breaks, adhesives, and other components needed for a complete, permanently weatherproof installation. Materials shall be non-deteriorating, corrosion resistant, and compatible with adjoining materials.
- C. Connections: Fasteners shall be of size and in quantities to securely and permanently join building components, and shall be complete with necessary hardware and accessories as required for the application. Connections shall allow for expansion and contraction in accordance with the approved design. Screw bolts and rivets shall have metal-backed sealing washers. Except as otherwise indicated, provide the following fastener types for the following locations:
 - 1. Roofing Panels to Structural Members: Screw bolts or rivets.
 - 2. Wall Panels to Structural Members: Screw bolts or standard bolted connection.
 - 3. Wall Panels to Wall Panels: Screw bolts, sheet metal screws or rivets.
 - 4. Interior Liner Panels to Supports: Cadmium plated steel fasteners of required type for secure attachment.
 - 5. Trim: Same fasteners as adjacent panels.
- D. Sealants, Gaskets and Closures:
 - 1. Tape Sealant: Flat shaped, elastomeric, non-hardening, ribbon sealant; type recommended by building manufacturer for the particular use and conditions of application.

2. Tube or Pumpable Sealant: Polybutenebutyl or acrylic terpolymer base sealant, or other type sealant recommended by building manufacturer for the particular use and conditions of application.
 3. Gaskets: Rubber, building manufacture's standard shapes.
 4. Closures: Closed cell foam or rubber material, formed to match panel profiles, sized to provide weathertightness.
- E. Galvanizing: Complying with the following requirements except where otherwise specified.
1. Formed Sheet Steel: ASTM A653, coating designation G-90.
 2. Assembled Steel Products: ASTM A123.
 3. Iron and Steel Hardware: ASTM A153.
 4. Products Fabricated From Rolled, Pressed and Forged Steel Shapes, Plates, Bars and Strip: ASTM A123.
- F. Color Finish: Factory applied color finish system on exposed surfaces of steel components specified to receive color finish, complying with the following requirements:
1. Surface Preparation: Galvanized steel shall be given a chemical conversion treatment conforming to Federal Government Specification MIL-C-490A, Type 1, Grade 1.
 2. Coating: After conversion treatment, metal shall be precision coated with thermosetting polymerized enamel to a dry film of one mil, plus or minus 0.2 mil, over the entire material width prior to forming of panels.
 3. Finish Pigmentation: Inorganic pigments selected for maximum durability and resistance to fading, except do not use aluminum pigment.
 4. Finish Gloss: Evenly maintained over the entire surface at 30, plus or minus 5 units, as measured on a 60 degrees Gardner photovolt meter for appearance, balance, reflectivity and durability.
 5. Colors: As selected by the Owner from building manufacturer's standard colors.

2.02 PRIMARY BUILDING FRAMING

- A. Columns, roof beams, trusses, and rigid frames shall be factory fabricated, with required holes in webs and flanges accurately punched or drilled unless otherwise indicated or approved. Enlarging or gouging holes at the site will not be permitted. Base plates, splice plates, stiffener plates, and other required plates shall be shop fabricated and welded in place where applicable.
- B. Rigid Frames: Clear span, solid web framing, tapered or uniform depth, welded-up plate section columns and beams.
1. Rigid Frame Tie Rods and Anchor Bolts:
 - a. Tie rods shall be round bars, of constant diameter or with integral upset ends.

- b. The allowable tensile stress on the unthreaded body area of tie rods, and on the tensile stress area of anchor bolt and tie rod threads shall be 22,000 psi.
 - c. Tie rods shall not be spliced by welding.
- C. Endwall Framing: Corner posts, endposts and rake beams; hot rolled sections, cold formed shapes, or built-up shapes of welded plate construction.
- D. Bracing: Wind bracing and struts, flange and knee bracing, sag rods, and other bracing and support members as required by the building design; steel angles and rods recommended by building manufacturer unless otherwise indicated.
- E. Bolts for Field Assembly of Primary Building Framing and Bracing: High strength bolts.
- F. Shop Painting: Comply with the following requirements except where otherwise specified:
 - 1. Steel framing shall be thoroughly cleaned of loose mill scale, loose rust, weld slag, and other foreign material. Oil and grease shall be removed with solvent.
 - a. Galvanized items shall be rinsed in hot alkali or in an acid solution and then in clear water. Welded and abraded galvanized surfaces shall be repaired with a 2 mil thick coating of cold galvanizing compound applied in accordance with compound manufacturer's instructions.
 - 2. One coat of primer paint shall be applied to all steel surfaces except surfaces to be welded and contact surfaces of high strength bolted connections.

2.03 SECONDARY BUILDING FRAMING

- A. Purlins: Cold formed steel shapes, or cold formed open web welded trusses.
- B. Girts: Cold formed steel shapes.
- C. Eave Members: Cold formed steel shapes.
- D. Sill Members: Roll formed galvanized steel base angle (or zee), or galvanized steel base tube with anchors.
- E. Overhead Door Frames: Frames shall be fabricated from structural shapes and bars as required to receive overhead doors, with corners fully welded and ground smooth, and with provisions for bracing to building framing. Exterior frames shall be galvanized after fabrication.

- F. Framing for Miscellaneous Openings: All openings shall be framed for proper support and attachment. Frames shall be fabricated from structural shapes and bars with corners fully welded and ground smooth, and with provisions for bracing to building framing. Exterior frames shall be galvanized after fabrication.
- G. Shop Painting: Comply with the requirements specified for Primary Building Framing.

2.04 ROOFING PANELS

- A. General:
 - 1. Roofing panels shall include all related components and accessories necessary for a complete roof system.
 - 2. Metal sheets shall be prefinished (coil coated) to the greatest extent possible prior to forming and panel fabrication.
 - 3. Panels shall be fabricated in maximum lengths possible as necessary to minimize end laps.
- B. Description:
 - 1. Type: Precision roll formed metal sheet.
 - 2. Type: Self-contained, factory assembled, foam core, insulated units.
 - 3. Covering Width: (TBD) inches.
 - 5. Seam Design (Sidejoint): Double interlocking standing seam, field formed (locked) with special machine.
 - 6. Cross Section Profile:
 - a. Manufacturer to provided specification for major ribs, including rib height and spacing, for review and approval by Engineer.
 - b. Minor ribs spaced between major ribs.
 - c. Embossment:
 - d. Fluting:
 - e. Corrugations:
- C. Materials:
 - 1. Panel Sheet: 24 gage galvanized steel.
 - 2. Panel Sheet: 24 gage "Aluminized Steel, Type 2" as produced by Armco Steel Corp.
 - 3. Exterior Facing: 24 gage galvanized steel.
 - 4. Core: Rigid polyurethane having an average density of 2 lb/cu ft, foamed-in-place between panel faces.
- D. Coatings and Finishes:
 - 1. Front Surface: G90 galvanized coating designation, and color finish.
 - 2. Back Surface: G90 galvanized coating designation, and panel manufacture's standard rust-inhibitive back surface finish used with specified front surface color finish.
 - 3. Front and Back Surfaces: .0011 inch thick aluminum coating.
 - 4. Exterior and Interior Facings:

- a. Front Surface: G90 galvanized coating designation, and color finish.
 - b. Back Surface: G90 galvanized coating designation, and panel manufacturer's standard rust-inhibitive back surface finish used with specified front surface color finish.

- E. Roof System Trim, Flashing, and Accessories: Materials shall be the same materials used for the panels, unless otherwise indicated below or required by the application. Configurations shall be the standard with the building manufacturer for the specified roofing panels, unless otherwise indicated below. Coatings and finishes shall match roofing panels, except building manufacturer's standard finishes (as required by application) may be furnished on special use accessories.
 - 1. Eave Trim:
 - 2. Gable/Rake Trim:
 - 3. Gutters:
 - 4. Scuppers:
 - 5. Sumps:
 - 6. Downspouts:
 - 7. Valleys:
 - 8. Ridge Caps:
 - 9. Hip Caps:
 - 10. Opening Curbs:
 - 11. Roof Transitions:
 - 12. Expansion Joint Covers:
 - 13. Closure Pieces:
 - 14. Roof Penetration Flashings:
 - a. Pipe Flashing: Pleated, one-piece, ethylene propylene diene monomer rubber units with aluminum alloy reinforcing ring bonded to base flange, sized for pipe diameter.

2.05 EXTERIOR WALL PANELS

- A. General:
 - 1. Exterior wall panels shall include all related components and accessories necessary for a complete exterior wall system.
 - 2. Metal sheets shall be prefinished (coil coated) to the greatest extent possible prior to forming and panel fabrication.
 - 3. Panels shall be fabricated in one-piece length from sill to roof line, except where panels are interrupted by auxiliary building components such as windows. Upper end of panels shall be fabricated to form a close fit with roof system. Provisions shall be made for a weathertight closure at ends of panels.
 - a. Self-contained insulated units shall be self draining to the exterior.

- B. Description:
 - 1. Type: Precision roll formed metal sheet.

2. Type: Self-contained, factory assembled, insulated units.
 3. Covering Width: (TBD) inches.
 4. Seam Design (Sidejoint): Overlapping side ribs.
 5. Seam Design (Sidejoint): Interlocking side ribs.
 6. Seam Design (Sidejoint): Double tongue and groove with seals.
 7. Cross Section Profile:
 - a. Manufacturer to provide specification for major ribs, including rib height and spacing, for review and approval by Engineer.
 - b. Minor ribs spaced between major ribs.
 8. Attachment to Supporting Members: Exposed fasteners.
 9. Attachment to Supporting Members: Concealed fasteners.
 10. Sidejoint Sealant/Gasket/Seal: Factory applied.
 13. Sidejoint Sealant/Gasket/Seal: Field applied.
- C. Materials:
1. Panel Sheet: (TBD) gage galvanized steel.
 2. Panel Sheet: 0.032 inch thick alclad 3003 aluminum, H274 temper.
 3. Exterior Facing: 24 gage galvanized steel.
 4. Interior Facing: (TBD) gage galvanized steel.
 6. Thermal Breaks/Joiners: Building manufacturer's standard thermal non-conductive material.
- D. Coatings and Finishes:
1. Front Surface: G90 galvanized coating designation, and color finish.
 2. Back Surface: G90 galvanized coating designation, and panel manufacturer's standard rust-inhibitive back surface finish used with specified front surface color finish.
 3. Front and Back Surfaces: Alclad hammered surface.
 4. Exterior Facing:
 - a. Front Surface: G90 galvanized coating designation, and color finish.
 - b. Back Surface: G90 galvanized coating designation, and panel manufacturer's standard rust-inhibitive back surface finish used with specified front surface color finish.
 5. Interior Facing:
 - a. Front Surface: G60 galvanized coating designation, and polyester paint finish.
 - b. Back Surface: G60 galvanized coating designation, and panel manufacturer's standard rust-inhibitive back surface finish used with specified front surface finish.
- E. Exterior Wall System Trim, Flashing, and Accessories: Materials shall be the same materials used for the panels, unless otherwise indicated below or required by the application. Configurations shall be the standard with the building manufacturer for the specified wall panels, unless otherwise indicated below. Coatings and finishes shall match wall panels, except building manufacturer's standard finishes (as required by application) may be furnished on special use accessories.

1. Corner Trim/Assemblies:
2. Opening Trim:
3. Base Angle/Channel/Tube Trim/Flashing:
4. Base Closure:
5. Base Molding (Interior):
6. Soffits:
7. Wall Transitions:
8. Expansion Joint Covers:
9. Accent/Shadow Mullions/Battens:
10. Infills:

2.06 FABRICATION

- A. Tolerances: Conform to tolerances set forth in MBMA Code of Standard Practice, except as follows:
 1. Alignment and fit-up of welded joints shall conform to the "Structural Welding Code - Steel" (AWS D1.1).

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Examine surfaces to receive the metal building for defects that will adversely affect the execution and quality of the Work. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION

- A. Protect factory applied finishes from damage during erection.
- B. Clean surfaces to receive the work of this Section.
- C. Isolation: Isolate aluminum in contact with cementitious materials and dissimilar metals, except compatible metals. Separate the materials by applying a heavy coat of bituminous paint or 10 mil self-adhesive polyethylene tape on the contact surfaces. Use gasketed fasteners where needed to eliminate the possibility of corrosive or electrolytic action between metals.

3.03 ERECTION AND INSTALLATION

- A. General: Erect and install the metal building and appurtenances in accordance with the manufacturer's printed instructions except as otherwise specified or required by the Reference Standards. Install the work of this Section so the structure is secure and weathertight, and exposed materials are free of visible dents, scratches, tool marks, cuts, and other imperfections. Install building systems free of rattles, wind whistles, and noise due to thermal movement.

- B. Framing Erection:
1. Provide temporary bracing to securely hold members in proper position until permanent bracing is fastened in place.
 2. Erect primary and secondary structural members in their designed positions, and fasten each securely in place.
 - a. Prepare, place, and cure shrink-resistant grout in accordance with grout manufacturer's printed instructions.
 3. Do not field cut or alter structural members without approval of the Engineer.
 4. After erection, touch-up welded and abraded surfaces, bare spots, and field bolts with shop primer paint.
 - a. For galvanized items, first repair galvanized coating with a 2 mil thick coating of cold galvanizing compound applied in accordance with compound manufacturer's instructions.
- C. Roofing System:
1. Assemble and anchor panels in place, in straight alignment, with provision for necessary thermal and structural movement. Locate panel end laps over supports. Lap panel ends minimum 6 inches. Fasten panels to each structural support.
 2. Seal longitudinal joints and transverse end laps.
 3. Flash and seal roof covering at ridges, hips, rakes, eaves, and junctions with all related building components and accessories so that the roof is watertight.
- D. Wall System:
1. Assemble and anchor panels in place, aligned and plumb, with provision for necessary thermal and structural movement. Use panels of one-piece length from sill to roof line with no horizontal joints, except where panels are interrupted by auxiliary building components such as windows. Fasten panels to each structural support.
 2. Seal longitudinal joints with sealant.
 3. Flash and seal wall covering at sill, roof lines, and junctions with all related building components and accessories so that the walls are watertight.
- G. Related Building Components: Install related components in their designed locations, fitted with required accessories. Securely fasten items to structural supports. Adjust and lubricate operative units for smooth and easy operation. Seal components watertight at junctions with wall and roof systems.
- H. Tolerances: Conform to tolerances set forth in MBMA Code of Standard Practice, except as follows:
1. Alignment and fit-up of welded joints shall conform to the "Structural Welding Code - Steel" (AWS D1.1).

3.04 ADJUSTING

- A. Restore minor visual damage to factory applied finishes in a manner to match the appearance and performance of the original finish, or remove the damaged parts and replace them with undamaged parts.

3.05 CLEANING

- A. Remove strippable protective coatings after completion of work liable to damage the finish. Comply with manufacturer's recommendations for coating removal.
- B. Clean exposed exterior and interior surfaces of exterior wall panels. Remove any residue from strippable coatings. Comply with panel manufacturer's printed recommendations for cleaning.
 - 1. Also clean exposed surface of interior liner panels.

END OF SECTION