

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT			1. CONTRACT ID CODE	PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO. 0004			3. EFFECTIVE DATE 27-Jan-2012		4. REQUISITION/PURCHASE REQ. NO.
6. ISSUED BY U. S. ARMY ENGINEER DISTRICT, LOUISVILLE 600 DR. MARTIN LUTHER KING, JR. PLACE ROOM 821 LOUISVILLE KY 40202-2239			CODE W912QR	7. ADMINISTERED BY (If other than item 6) CIVIL/OPS/ENVIRONMENTAL BR ATTN: STEPHANIE M. CRAIG 600 DR M L KING JR PL RM 821 LOUISVILLE KY 40202-2236	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)			X	9A. AMENDMENT OF SOLICITATION NO. W912QR-12-R-0017	
			X	9B. DATED (SEE ITEM 11) 05-Dec-2011	
				10A. MOD. OF CONTRACT/ORDER NO.	
				10B. DATED (SEE ITEM 13)	
CODE			FACILITY CODE		
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS					
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended.					
Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning <u>1</u> copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.					
12. ACCOUNTING AND APPROPRIATION DATA (If required)					
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.					
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.					
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).					
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:					
D. OTHER (Specify type of modification and authority)					
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)					
Solicitation No. W912QR-12-R-0017 for Construction of Tactical Equipment Maintenance Facilities (TEMFs), Ft. Campbell, Tennessee, is hereby amended as follows:					
SEE SUMMARY OF CHANGES					
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.					
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)		
			TEL: _____ EMAIL: _____		
15B. CONTRACTOR/OFFEROR		15C. DATE SIGNED	16B. UNITED STATES OF AMERICA		16C. DATE SIGNED
_____ (Signature of person authorized to sign)			BY _____ (Signature of Contracting Officer)		27-Jan-2012

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

SUMMARY OF CHANGES

SECTION SF 30 - BLOCK 14 CONTINUATION PAGE

The following have been added by full text:

SUMMARY OF CHANGES

- a. Drawing Sheet CS102-A has been revised.
- b. Drawing Sheet TEMF A-101-A has been revised.
- c. Drawing Sheet TEMF A-104-A has been revised.
- d. Drawing Sheet CS102-B has been revised.
- e. Drawing Sheet CD104-B has been revised.
- f. Drawing Sheet TEMF A-104-B has been revised.
- g. Specification Section 13 34 20 has been revised.
- h. The due date remains 10:00 am EST on 08 February 2012.
- i. All other terms and conditions remain unchanged.

The following have been deleted:

SUMMARY OF CHANGES

(End of Summary of Changes)

SECTION 13 34 20

METAL BUILDING SYSTEMS (TEMF)

05/11

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

AISC 325	(2005) Steel Construction Manual
ANSI/AISC 341	(2005; Suppl No. 1 2005) Seismic Provisions for Structural Steel Buildings
ANSI/AISC 360	(2005) Specification for Structural Steel Buildings

AMERICAN IRON AND STEEL INSTITUTE (AISI)

AISC/AISI 121	(2004) Standard Definitions for Use in the Design of Steel Structures
AISI SG03-3	(2002; Suppl 2001-2004; R 2008) Cold-Formed Steel Design Manual Set

AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)

ASCE 7-10	(2010) Minimum Design Loads for Buildings and Other Structures
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AMERICAN WELDING SOCIETY (AWS)

AWS A5.1/A5.1M	(2004) Specification for Carbon Steel Electrodes for Shielded Metal Arc Welding
AWS D1.1/D1.1M	(2010) Structural Welding Code - Steel
AWS D1.3/D1.3M	(2008; Errata 2008) Structural Welding Code - Sheet Steel

ASTM INTERNATIONAL (ASTM)

ASTM A1008/A1008M	(2010) Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardened
ASTM A1011/A1011M	(2010) Standard Specification for Steel, Sheet, and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved

Formability and Ultra-High Strength

ASTM A123/A123M	(2009) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM A153/A153M	(2009) Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM A307	(2010) Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength
ASTM A325	(2010) Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
ASTM A36/A36M	(2008) Standard Specification for Carbon Structural Steel
ASTM A463/A463M	(2010) Standard Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process
ASTM A500/A500M	(2010a) Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
ASTM A501	(2007) Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing
ASTM A529/A529M	(2005; R 2009) Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality
ASTM A53/A53M	(2010) Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
ASTM A563	(2007a) Standard Specification for Carbon and Alloy Steel Nuts
ASTM A563M	(2007) Standard Specification for Carbon and Alloy Steel Nuts (Metric)
ASTM A572/A572M	(2007) Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel
ASTM A606/A606M	(2009a) Standard Specification for Steel Sheet and Strip, High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, with Improved Atmospheric Corrosion Resistance
ASTM A653/A653M	(2010) Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or

	Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM A755/A755M	(2003; R 2008) Standard Specification for Steel Sheet, Metallic Coated by the Hot-Dip Process and Prepainted by the Coil-Coating Process for Exterior Exposed Building Products
ASTM A792/A792M	(2010) Standard Specification for Steel Sheet, 5% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process
ASTM A992/A992M	(2006a) Standard Specification for Structural Steel Shapes
ASTM B 117	(2009) Standard Practice for Operating Salt Spray (Fog) Apparatus
ASTM B 209	(2007) Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
ASTM B 221	(2008) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
ASTM B 221M	(2007) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric)
ASTM C 1289	(2010) Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board
ASTM C 1363	(2005) Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus
ASTM C 273/C 273M	(2007a) Shear Properties of Sandwich Core Materials
ASTM C 518	(2010) Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus
ASTM C 920	(2011) Standard Specification for Elastomeric Joint Sealants
ASTM D 1056	(2007) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber
ASTM D 1308	(2002; R 2007) Effect of Household Chemicals on Clear and Pigmented Organic Finishes
ASTM D 1621	(2010) Compressive Properties of Rigid Cellular Plastics

ASTM D 1622	(2008) Apparent Density of Rigid Cellular Plastics
ASTM D 1667	(2005) Flexible Cellular Materials - Poly (Vinyl Chloride) Foam (Closed-Cell)
ASTM D 2244	(2009b) Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates
ASTM D 2247	(2010) Testing Water Resistance of Coatings in 100% Relative Humidity
ASTM D 2794	(1993; R 2010) Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)
ASTM D 3363	(2005) Film Hardness by Pencil Test
ASTM D 4214	(2007) Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films
ASTM D 522	(1993a; R 2008) Mandrel Bend Test of Attached Organic Coatings
ASTM D 523	(2008) Standard Test Method for Specular Gloss
ASTM D 6226	(2010) Standard Test Method for Open Cell Content of Rigid Cellular Plastics
ASTM D 714	(2002; R 2009) Evaluating Degree of Blistering of Paints
ASTM D 822	(2001; R 2006) Filtered Open-Flame Carbon-Arc Exposures of Paint and Related Coatings
ASTM D 968	(2005; R 2010) Abrasion Resistance of Organic Coatings by Falling Abrasive
ASTM DEFONLINE	(2008) ASTM Online Dictionary of Engineering Science and Technology
ASTM E 1592	(2005) Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference
ASTM E 1646	(1995; R 2003) Standard Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Air Pressure Difference
ASTM E 1980-01	(2001) Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces

ASTM E 168	(2006) General Techniques of Infrared Quantitative Analysis
ASTM E 283	(2004) Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen
ASTM E 331	(2000; R 2009) Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
ASTM E 84	(2010b) Standard Test Method for Surface Burning Characteristics of Building Materials
ASTM F 1554	(2007a) Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength
ASTM F 436	(2010) Hardened Steel Washers
ASTM G 152	(2006) Operating Open Flame Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials
ASTM G 153	(2004; R 2010) Operating Enclosed Carbon Arc Light Apparatus for Exposure of Nonmetallic Materials

METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA)

MBMA MBSM	(2002) Metal Building Systems Manual
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NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)

NAAMM AMP 500	(2006) Metal Finishes Manual
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SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)

SMACNA 1793	(2003) Architectural Sheet Metal Manual, 6th Edition
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THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Paint 15	(1999; E 2004) Steel Joist Shop Primer
SSPC Painting Manual	(2002) Good Painting Practice, Steel Structures Painting Manual, Volume 1
SSPC SP 2	(1982; E 2004) Hand Tool Cleaning

U.S. GREEN BUILDING COUNCIL (USGBC)

LEED	(2002; R 2005) Leadership in Energy and Environmental Design™ Green Building Rating System for New Construction
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(LEED-NC)

UNIFIED FACILITIES CRITERIA (UFC)

UFC 4-010-01 (2003; R 2007) DoD Minimum Antiterrorism Standards for Buildings, includes Change 1

1.2 GENERAL REQUIREMENTS

1.2.1 Structural Performance

Provide metal building systems capable of withstanding the effects of gravity loads and the following loads and stresses within the limits and conditions indicated.

1.2.1.1 Engineering

Design metal building systems conforming to procedures described in MBMA MBSM. Design foundation to support metal building systems.

1.2.1.2 Design Loads

Conform to the requirements of MBMA MBSM, ASCE 7-10, the building code applicable to the project geographical location, and UFC 4-010-01 as applicable. Windows/skylight support structures and associated fasteners will also be designed to meet Antiterrorism/Force Protection criteria as indicated in UFC 4-010-01..

1.2.1.3 Live Loads

Include all vertical loads induced by the building occupancy indicated on the drawings, as well as loads induced by maintenance workers, materials and equipment for roof live loads.

1.2.1.4 Roof Snow Loads

For snow loads greater than 0, include vertical loads induced by the weight of snow.Allow for unbalanced and drift loads.

1.2.1.5 Wind Loads

Include horizontal loads induced by a basic wind speed as shown on the drawings.

1.2.1.6 Collateral Loads

Include additional dead loads other than the weight of metal building system for permanent items such as sprinklers, mechanical systems, electrical systems, and ceilings.

1.2.1.7 Auxiliary Loads

Include dynamic live loads, such as those generated by cranes and materials-handling equipment indicated on detail drawings.

1.2.1.8 Load Combinations

Design metal building systems to withstand the most critical effects of load factors and load combinations as required by MBMA MBSM, ASCE 7-10, and

the building code applicable to the project location.

1.2.1.9 Deflection Limits

Engineer assemblies to withstand design loads with deflections no greater than the following:

- a. Purlins and Rafters; vertical deflection of 1/180 of the span.
- b. Girts; horizontal deflection of 1/180 of the span.
- c. Metal Roof Panels; vertical deflection of 1/180 of the span.
- d. Metal Wall Panels; horizontal deflection of 1/180 of the span.

Design secondary framing system to accommodate deflection of primary building structure and construction tolerances, and to maintain clearances at openings. Provide metal panel assemblies capable of withstanding the effects of loads and stresses indicated, based on testing according to ASTM E 1592.

1.2.2 Seismic Performance

Design and engineer metal building system capable of withstanding the effects of earthquake motions determined according to ASCE 7-10, ANSI/AISC 341, data shown on the drawings.

1.2.3 Thermal Movements

Provide metal panel systems that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss as follows:

Temperature Change (Range); 120 F, ambient; 180 F, material surfaces.

1.2.4 Thermal Performance

Provide factory insulated corewall panel assemblies with the following maximum U-factors and minimum R-values for opaque elements when tested according to ASTM C 1363 or ASTM C 518.

1.2.5 Air Infiltration for Metal Roof Panels

Air leakage through assembly must not exceed 0.06 cfm/sq.ft. of roof area when tested according to ASTM E 168 at negative test-pressure difference of 1.57 lbf/sq.ft. .

1.2.6 Air Infiltration for Metal Wall Panels

Air leakage through assembly of not more than 0.06 cfm/sq.ft. of wall area when tested according to ASTM E 283 at static-air-pressure difference of 6.24 lbf/sq.ft. .

1.2.7 Water Penetration for Metal Roof Panels

No water penetration when tested according to ASTM E 1646 at test-pressure

difference of 2.86 lbf/sq.ft. .

1.2.8 Water Penetration for Metal Wall Panels

No water penetration when tested according to ASTM E 331 at a wind-load design pressure of not less than 6.24 lbf/sq.ft. . and not more than 12 lbf/sq. ft.

1.3 DEFINITIONS

ASTM DEFONLINE applies to this definition paragraph.

- a. Bay: Dimension between main frames measured normal to frame (at centerline of frame) for interior bays, and dimension from centerline of first interior main frame measured normal to end wall (outside face of end-wall girt) for end bays.
- b. Building Length: Dimension of the building measured perpendicular to main framing from end wall to end wall (outside face of girt to outside face of girt).
- c. Building Width: Dimension of the building measured parallel to main framing from sidewall to sidewall (outside face of girt to outside face of girt).
- d. Clear Span: Distance between supports of beams, girders, or trusses (measured from lowest level of connecting area of a column and a rafter frame or knee).
- e. Eave Height: Vertical dimension from finished floor to eave (the line along the sidewall formed by intersection of the planes of the roof and wall).
- f. Clear Height under Structure: Vertical dimension from finished floor to lowest point of any part of primary or secondary structure, not including crane supports, located within clear span.
- g. Terminology Standard: Refer to MBMA "Metal Building Systems Manual" for definitions of terms for metal building system construction not otherwise defined in this Section or in referenced standards.

1.4 SYSTEM DESCRIPTION

Provide a complete, integrated set of metal building system manufacturer's standard mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior. Include primary and secondary framing, metal roof panels, metal wall panels, and accessories complying with requirements indicated.

Provide metal building system of size and with spacing, slopes, and spans indicated.

1.4.1 Primary Frame Type

- a. Rigid Clear Span: Solid-member, structural-framing system without interior columns.

- b. Lean To: Solid- or truss-member, structural-framing system without interior columns, designed to be partially supported by another structure.

1.4.2 Fixed End-Wall Framing

Provide manufacturer's standard fixed end wall, for buildings not required to be expandable, consisting of primary frame, capable of supporting one-half of a bay design load, and end-wall columns.

1.4.3 Secondary Frame Type

Provide manufacturer's standard purlins and joists and exterior-framed (bypass) girts.

1.4.4 Eave Height

Eave height must be Manufacturer's standard height, as indicated by nominal height on Drawings.

1.4.5 Bay Spacing

Bay Spacing must be as shown on the drawings.

1.4.6 Roof Slope

Roof slope must be as shown on the drawings.

1.4.7 Roof System

Provide roof system in accordance with Section 07 61 14.00 20 STANDING SEAM ROOFING & INSULATION.

1.4.8 Factory Insulated Core Wall Panel

Provide manufacturer's standard factory insulated core wall panels with concealed fastening attachment. Panel profile shall be ribbed and exterior and interior finish of panel shall be factory finished as indicated in the drawings.

1.5 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Manufacturer's Qualifications; G, RO

SD-02 Shop Drawings

Detail Drawings; G, DO

Calculations; G, DO

SD-03 Product Data

Factory Insulated Core Wall Panels; G, RO

Documentation shall also indicate percentage of post-industrial and post-consumer recycled content per unit of product.

SD-04 Samples

Coil Stock, 12 inches long by the actual panel width

Factory Insulated CoreWall Panels, 12 inches long by actual panel width

Fasteners

Metal Closure Strips, 10 inches long of each type

SD-05 Design Data

Manufacturer's descriptive and technical literature; G, DO

Manufacturer's building design analysis; G, DO

SD-06 Test Reports

test reports

Coatings and base metals

Factory Color Finish Performance Requirements

SD-07 Certificates

system components

Coil Stock certification

Qualification of Manufacturer

Qualification of Erector

SD-08 Manufacturer's Instructions

Installation of Wall panels

shipping, handling, and storage

SD-11 Closeout Submittals

Manufacturer's Warranty

Contractor's Warranty for Installation

LEED

LEED data for recycled content, regional materials, heat island (SRI), low emitting materials.

1.6 QUALITY ASSURANCE

1.6.1 Pre-Erection Conference

After submittals are received and approved but before metal building system work, including associated work, is performed, the Contracting Officer will hold a pre-erection conference to review the following:

- a. The detail drawings, specifications, and manufacturer's descriptive and technical literature.
- b. Finalize construction schedule and verify availability of materials, erector's personnel, equipment, and facilities needed to make progress and avoid delays.
- c. Methods and procedures related to metal building system erection, including, but not limited to: qualification of manufacturer, qualification of erector, manufacturer's catalog data, building design analysis, written instructions and test reports.
- d. Support conditions for compliance with requirements, including alignment between and erection of structural members.
- e. Flashing, special roofing and siding details, roof and wall penetrations, openings, and condition of other construction that will affect metal building system, including coatings and base metals, factory color finish performance requirements, system components, and certificates for coil stock.
- f. Governing regulations and requirements for, certificates, insurance, tests and inspections if applicable.
- g. Temporary protection requirements for metal panel assembly during and after installation.

1.6.1.1 Pre-Roofing and Siding Installation Conference

After structural framing system erection and approval but before roofing, siding, and insulation work, including associated work, is performed; the Contracting Officer will hold a pre-roofing and siding conference to review the following:

- a. Examine purlins, sub-girts and formed shapes conditions for compliance with requirements, including flatness and attachment to structural members.
- b. Review structural limitations of purlins, sub-girts and formed shapes during and after roofing and siding.
- c. Review flashings, special roof and wall details, roof drainage, roof and wall penetrations, roof equipment curbs, and condition of other construction that will affect the metal building system.
- d. Review temporary protection requirements for metal roof and wall panels' assembly during and after installation.
- e. Review roof and wall observation and repair procedures after metal building system erection.

1.6.2 Manufacturer's Technical Representative

The representative must have authorization from manufacturer to approve field changes and be thoroughly familiar with the products, erection of structural framing and installation of wall panels in the geographical area where construction will take place.

1.6.3 Manufacturer's Qualifications

Metal building system manufacturer must have a minimum of five (5) years experience as a qualified manufacturer of metal building systems and accessory products.

Provide engineering services by professional engineer currently licensed engineer in the state of Kentucky, having a minimum of four years experience as an engineer knowledgeable in building design analysis, protocols and procedures for the "Metal Building Systems Manual" (MBMA MBSM); ASCE 7-10, and ASTM E 1592.

Provide certified engineering calculations using the products submitted for:

- a. Roof and Wall Wind Loads with basic wind speed, exposure category, co-efficient, importance factor, designate type of facility, negative pressures for each zone, methods and requirements of attachment.
- b. Roof Dead and Live Loads
- c. Collateral Loads
- d. Foundation Loads
- e. Roof Snow Load
- f. Seismic Loads

1.6.4 Qualification of Erection Contractor

An experienced erector who has specialized in erecting and installing work similar in material, design, and extent to that indicated for this Project and must be approved and certified by the metal building system manufacturer.

1.6.5 Single Source

Obtain primary and secondary components and structural framing members, each type of metal roof, wall and liner panel assemblies, clips, closures and other accessories from the standard products of the single source from a single manufacturer to operate as a complete system for the intended use.

1.6.6 Welding

Qualify procedures and personnel according to AWS A5.1/A5.1M, AWS D1.1/D1.1M, and AWS D1.3/D1.3M.

1.6.7 Structural Steel

Comply with AISC 325, ANSI/AISC 360, for design requirements and allowable stresses.

1.6.8 Cold-Formed Steel

Comply with AISC/AISI 121 and AISI SG03-3 for design requirements and allowable stresses.

1.6.9 Surface-Burning Characteristics

Provide metal panels having field-insulation and insulation core material with the following surface-burning characteristics as determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency showing:

- a. Flame-Spread Index: 25 or less.
- b. Smoke-Developed Index: 450 or less.

1.6.10 Fabrication

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 with dimensional and structural requirements

Provide metal panel profile, including major ribs and intermediate stiffening ribs, if any, for full length of panel. Aluminum and aluminum-alloy sheet and plate must conform to ASTM B 209.

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 weather-tight and minimize noise from movements within panel assembly.

Sheet Metal Accessories: Fabricate flashing and trim to comply with recommendations in SMACNA 1793 that apply to the design, dimensions, metal, and other characteristics of item indicated:

- a. 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.
- b. End Seams: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
- c. Sealed Joints: Form non-expansion but movable joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.
- d. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
- e. Fabricate cleats and attachment devices of size and metal thickness recommended by SMACNA or by metal building system manufacturer for application, but not less than thickness of metal being secured.

1.6.11 Finishes

Comply with NAAMM AMP 500 for recommendations for applying and designating finishes.

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.

1.7 SHIPPING, HANDLING AND STORAGE

1.7.1 Delivery

Package and deliver components, sheets, metal panels, and other manufactured items so as not to be damaged or deformed and protected during transportation and handling.

Stack and store metal panels horizontally on platforms or pallets, covered with suitable weather-tight and ventilated covering to ensure dryness, with positive slope for drainage of water. Store in a manner to prevent bending, warping, twisting, and surface damage. Do not store metal wall panels in contact with other materials that might cause staining, denting, or other surface damage. Retain strippable protective covering on metal panel for entire period up to metal panel installation.

Complete installation and concealment of plastic materials as rapidly as possible in each area of construction to minimize ultraviolet exposure.

1.8 PROJECT CONDITIONS

1.8.1 Weather Limitations

Proceed with installation preparation only when existing and forecasted weather conditions permit Work to proceed without water entering into existing panel system or building.

1.9 COORDINATION

Coordinate size and location of concrete foundations and casting of anchor-bolt inserts into foundation walls and footings. Concrete, reinforcement, and formwork requirements are specified in Section 03 30 00 CAST-IN-PLACE CONCRETE.

Coordinate metal panel assemblies with rain drainage work, flashing, trim, and construction of supports and other adjoining work to provide a leak-proof, secure, and non-corrosive installation.

1.10 WARRANTY

1.10.1 Building System Warranty

Furnish manufacturer's no-dollar-limit warranty for the metal building system. The warranty period is to be no less than 20 years from the date of acceptance of the work and be issued directly to the Government. The warranty must provide that if within the warranty period, the metal building system shows evidence of deterioration resulting from defective materials and/or workmanship, correcting of any defects is the responsibility of the metal building system manufacturer.

1.10.2 Wall Panel Finish Warranty

Furnish manufacturer's no-dollar-limit warranty for the metal panel system. The warranty period is to be no less than 20 years from the date of acceptance of the work and be issued directly to the Government.

The warranty is to provide that if within the warranty period the metal panel system shows evidence of checking, delaminating cracking, peeling, chalk in excess of a numerical rating of eight, as determined by ASTM D 4214 test procedures; or change colors in excess of five CIE or Hunter units in accordance with ASTM D 2244 or excess weathering due to deterioration of the panel system resulting from defective materials and finish or correction of the defective workmanship is to be the responsibility of the metal building system manufacturer.

Liability under this warranty is exclusively limited to replacing the defective coated materials.

PART 2 PRODUCTS

2.1 STRUCTURAL FRAMING MATERIALS

2.1.1 W-Shapes

ASTM A992/A992M; ASTM A572/A572M or ASTM A529/A529M.

2.1.2 Channel, Angles, M-Shapes and S-Shapes

ASTM A36/A36M; ASTM A572/A572M or ASTM A529/A529M.

2.1.3 Plate and Bar

ASTM A36/A36M, ASTM A572/A572M or ASTM A529/A529M.

2.1.4 Steel Pipe

ASTM A36/A36M, ASTM A53/A53M, ASTM A572/A572M or ASTM A529/A529M.

2.1.5 Cold-Formed and Hot Formed Hollow Structural Sections

Cold formed: ASTM A500/A500M or ASTM B 221, ASTM B 221M. Hot-formed: ASTM A501.

2.1.6 Structural-Steel Sheet

Hot-rolled, ASTM A1011/A1011M or cold-rolled, ASTM A1008/A1008M.

2.1.7 Metallic-Coated Steel Sheet

ASTM A653/A653M, ASTM A606/A606M.

2.1.8 Metallic-Coated Steel Sheet Pre-painted with Coil Stock Coating

Steel sheet metallic coated by the hot-dip process and pre-painted by the coil-coating process to comply with ASTM A755/A755M.

- a. Zinc-Coated (Galvanized) Steel Sheet: ASTM A653/A653M and ASTM A123/A123M.
- b. Aluminum-Zinc Alloy-Coated Steel Sheet: ASTM A792/A792M and ASTM A463/A463M.

2.1.9 Steel Joists

Refer to the following sections subject to project design requirements:

Section 05 21 19 OPEN WEB STEEL JOIST FRAMING

2.1.10 High-Strength Bolts, Nuts, and Washers

ASTM A325, heavy hex steel structural bolts; ASTM A563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers.

Finish: Plain Hot-dip zinc coating, ASTM A153/A153M .2.1.11 Anchor Rods

ASTM F 1554 .

- a. Configuration: Straight.
- b. Nuts: ASTM A563 hex carbon steel.
- c. Plate Washers: ASTM A36/A36M carbon steel.

2.1.12 Threaded Rods

ASTM A572/A572M, ASTM A36/A36M and ASTM A307.

- a. Nuts: ASTM A563 hex carbon steel.
- b. Washers: ASTM F 436 hardened, ASTM A36/A36M carbon steel.
- c. Finish: Hot-dip zinc coating, ASTM A153/A153M .

2.1.13 Primer

SSPC-Paint 15, Type I, red oxide.

2.2 FABRICATION

2.2.1 General

Comply with MBMA MBSM - "Metal Building Systems Manual": Chapter IV, Section 9, "Fabrication and Erection Tolerances."

2.3 STRUCTURAL FRAMING

2.3.1 General

Clean all framing members to remove loose rust and mill scale. Provide 1 shop coat of primer to an average dry film thickness of 1 mil according to SSPC SP 2. Balance of painting and coating procedures must conform to SSPC Paint 15 and SSPC Painting Manual.

2.3.2 Primary Framing

Manufacturer's standard structural primary framing system includes transverse and lean-to frames; rafter, rakes, and canopy beams; sidewall, intermediate, end-wall, and corner columns; and wind bracing designed to withstand required loads and specified requirements. Provide frames with attachment plates, bearing plates, and splice members. Provide frame span and spacing indicated.

Shop fabricate framing components by welding or by using high-strength

bolts to the indicated size and section with base-plates, bearing plates, stiffeners, and other items required. Cut, form, punch, drill, and weld framing for bolted field erection.

- a. Rigid Clear-Span Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes. Interior columns are not permitted.
- b. Rigid Modular Frames: I-shaped frame sections fabricated from shop-welded, built-up steel plates or structural-steel shapes.
- c. Frame Configuration: As required to comply with systems performance requirements.
- d. Exterior Column Type: As required to comply with systems performance requirements.
- e. Rafter Type: As required to comply with systems performance requirements.

2.3.3 Secondary Framing

Manufacturer's standard secondary framing members, including purlins, girts, eave struts, flange bracing, base members, gable angles, clips, headers, jambs, and other miscellaneous structural members. Fabricate framing from cold-formed, structural-steel sheet or roll-formed, metallic-coated steel sheet pre-painted with coil coating, unless otherwise indicated.

Shop fabricate framing components by roll-forming or break-forming to the indicated size and section with base-plates, bearing plates, stiffeners, and other plates required for erection. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing.

- a. Purlins: C or Z-shaped sections; fabricated from steel sheet, built-up steel plates, or structural-steel shapes; minimum depth As required to comply with system performance requirements .
- b. Girts: C or Z-shaped sections; fabricated from steel sheet, built-up steel plates, or structural-steel shapes. Form ends of Z-sections with stiffening lips angled 40 to 50 degrees to flange minimum depth as required to comply with system performance requirements.
- c. Eave Struts: Unequal-flange, C-shaped sections; fabricated from steel sheet, built-up steel plates, or structural-steel shapes; to provide adequate backup for metal panels.
- d. Flange Bracing: Structural-steel angles or cold-formed structural tubing to stiffen primary frame flanges.
- e. Sag Bracing: Structural-steel angles.
- f. Base or Sill Angles: Zinc-coated (galvanized) steel sheet.
- g. Purlin and Girt Clips: Steel sheet. Provide galvanized clips where clips are connected to galvanized framing members.
- h. Secondary End-Wall Framing: Manufacturer's standard sections .

- i. Framing for Openings: Channel shapes; fabricated cold-formed, structural-steel sheet or structural-steel shapes. Frame head and jamb of door openings, and head, jamb, and sill of other openings.
- j. Miscellaneous Structural Members: Manufacturer's standard sections fabricated from cold-formed, structural-steel sheet; built-up steel plates; or zinc-coated (galvanized) steel sheet; designed to withstand required loads.

2.3.4 Bracing

Provide adjustable wind bracing as follows:

- c. Angles: Fabricated from structural-steel shapes to match primary framing, of size required to withstand design loads.
- d. Rigid Portal Frames: Fabricate from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
- e. Fixed-Base Columns: Fabricate from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.
- f. Diaphragm Action of Metal Panels: Design metal building to resist wind forces through diaphragm action of metal panels.
- g. Bracing: Provide wind bracing using any method specified above, at manufacturer's option.

2.4 PANEL MATERIALS

2.4.1 Recycled Content

Steel panels are an EPA designated product for recycled content with an EPA recommended minimum 25 percent recycled content. Provide recycled content steel roofing in accordance with Section 01 62 35 RECYCLED/RECOVERED MATERIALS.

2.4.2 Steel Sheet

Roll-form steel panels to the specified profile. Material must be plumb and true, and within the tolerances listed:

- a. Galvanized Steel Sheet conforming to ASTM A653/A653M and AISI SG03-3.
- c. Individual panels to have continuous length to cover the entire length of any unbroken wall area with no joints or seams and formed without warping, waviness, or ripples that are not part of the panel profile and free of damage to the finish coating system.
- d. Provide panels with thermal expansion and contraction consistent with the type of system specified.

2.4.3 Factory Insulated Core Wall Panel

Provide factoryinsulated core wall panel assembly fabricated from two sheets of metal with modified polyisocyanurate or polyurethane foam

insulation core during fabrication with joints between panels designed to form weather-tight and air tight seals. Include accessories required for weather-tight and air tight installation.

- a. Closed-Cell Content: 90 percent when tested according to ASTM D 6226, ASTM C 1289.
- b. Density: 2.0 to 2.6 lb/cu. ft. when tested according to ASTM D 1622.
- c. Compressive Strength: Minimum 20 psi when tested according to ASTM D 1621.
- d. Shear Strength: 26 psi when tested according to ASTM C 273/C 273M.

2.4.4 Insulated Core Wall Panel Construction

Provide factory insulated core wall panels with specified exterior and interior metal sheet in accordance with manufacturer's printed instructions.

Panel profile shall be ribbed as indicated on the drawings. All field-applied interior adhesives, sealants, primers and sealants used as a filler must meet the requirements of LEED low emitting materials credit. Insulation shall be contain no CFC or HCFC compounds.

Insulation fasteners to be adhesively attached, plate welded to projecting spindle anchors; capable of holding insulation of thickness indicated, secured in position with self-locking washer and complying with the following requirements:

- c. Insulation-Retaining Washers: Self-locking washers formed from 0.016 inch thick galvanized steel sheet, with beveled edge for increased stiffness, sized as required to hold insulation securely in place, but not less than 1-1/2 inches square or in diameter.
- d. Anchor adhesive to be a product with demonstrated capability to bond insulation anchors securely to substrates indicated without damaging insulation, fasteners, and substrates.

2.4.5 Finish

Finished roof surfaces installed at 2:12 slope or less shall have a minimum Solar Reflective Index (SRI) of 78, measured in accordance with ASTM E 1980-01. Finished roof surfaces installed at slopes greater than 2:12 shall have a minimum SRI of 29, measured in accordance with ASTM E 1980-01

All panels are to receive a factory-applied Kynar 500/Hylar 5000 finish consisting of a baked-on top-coat with a manufacturer's recommended prime coat conforming to the following:

- a. Metal Preparation: All metal is to have the surfaces carefully prepared for painting on a continuous process coil coating line by alkali cleaning, hot water rinsing, application of chemical conversion coating, cold water rinsing, sealing with acid rinse, and thorough drying.
- b. Prime Coating: A base coat of epoxy paint, specifically formulated to interact with the top-coat, is to be applied to the prepared surfaces by roll coating to a dry film thickness of 0.20 plus 0.05 mils. This prime coat must be oven cured prior to application of finish coat.

- c. Exterior Finish Coating: Apply the finish coating over the primer by roll coating to dry film thickness of 0.80 plus 5 mils (3.80 plus 0.50 mils for Vinyl Plastisol) for a total dry film thickness of 1.00 plus 0.10 mils (4.00 plus 0.10 mils for Vinyl Plastisol). This finish coat must be oven-cured.
- d. Interior Finish Coating: Apply a wash-coat on the reverse side over the primer by roll coating to a dry film thickness of 0.30 plus 0.05 mils for a total dry film thickness of 0.50 plus 0.10 mils. The wash-coat must be oven-cured.
- e. Color: The exterior finish chosen from the manufacturer's color charts and chips.
- f. Physical Properties: Coating must conform to the industry and manufacturer's standard performance criteria as listed by the following certified test reports:

Chalking: ASTM DEFONLINE
Color Change and Conformity: ASTM D 2244
Weatherometer: ASTM G 152, ASTM G 153 and ASTM D 822
Humidity: ASTM D 2247 and ASTM D 714
Salt Spray: ASTM B 117
Chemical Pollution: ASTM D 1308
Gloss at 60 degrees: ASTM D 523
Pencil Hardness: ASTM D 3363
Reverse Impact: ASTM D 2794
Flexibility: ASTM D 522
Abrasion: ASTM D 968
Flame Spread: ASTM E 84

2.4.6 Repair Of Finish Protection

Repair color finish in accordance with manufacturer's requirements.

2.5 MISCELLANEOUS METAL FRAMING

2.5.1 General

Cold-formed metallic-coated steel sheet conforming to ASTM A653/A653M and specified in Section 05 40 00 COLD-FORMED METAL FRAMING unless other wise indicated.

2.5.2 Fasteners for Miscellaneous Metal Framing

Refer to the following paragraph "FASTENERS".

2.6 FASTENERS

2.6.1 General

Type, material, corrosion resistance, size and sufficient length to penetrate the supporting member a minimum of 1 inch with other properties required to fasten miscellaneous metal framing members to substrates in accordance with the metal panel manufacturer's and ASCE 7-10 requirements.

2.6.2 Exposed Fasteners

Fasteners for metal panels to be corrosion resistant coated steel, aluminum, stainless steel, or nylon capped steel compatible with the sheet panel or flashing and of a type and size recommended by the manufacturer to meet the performance requirements and design loads. Fasteners for accessories to be the manufacturer's standard. Provide an integral metal washer matching the color of attached material with compressible sealing EPDM gasket approximately 3/32 inch thick.

2.6.3 Screws

Screws to be corrosion resistant coated steel, aluminum and/or stainless steel being the type and size recommended by the manufacturer to meet the performance requirements.

2.6.4 Rivets

Rivets to be closed-end type, corrosion resistant coated steel, aluminum or stainless steel where watertight connections are required.

2.6.5 Attachment Clips

Fabricate clips from steel hot-dipped galvanized in accordance with ASTM A653/A653M or Series 300 stainless steel. Size, shape, thickness and capacity as required meeting the insulation thickness and design load criteria specified.

2.7 FRAMES AND MATERIALS FOR OPENINGS

2.7.1 Doors

Provide doors in accordance with other specific door specifications in this project

2.7.2 Windows

Provide windows in accordance with other specific window specification in this project.

2.7.3 Skylights

Provide skylights in accordance with Section 08 62 00 SKYLIGHTS.

2.8 ACCESSORIES

2.8.1 General

All accessories to be compatible with the metal panels; sheet metal flashing, trim, metal closure strips, caps and similar metal accessories must not be less than the minimum thickness specified for the metal panels. Exposed metal accessories/finishes to match the panels furnished, except as otherwise indicated. Molded foam rib, ridge and other closure strips to be non-absorbent closed-cell or solid-cell synthetic rubber or pre-molded neoprene to match configuration of the panels.

2.8.2 Roof and Wall Accessories and Specialties

Metal roof curbs, equipment supports, roof hatches, dropout-type heat and

smoke vents, hatch-type heat and smoke vents, gravity and roof ridge ventilators, wall louvers and other miscellaneous roof and wall equipment or penetrations conforming to AAMA, ASTM, and UL as specified in Division 07 unless other wise indicated.

2.8.3 Rubber Closure Strips

Closed-cell, expanded cellular rubber conforming to ASTM D 1056 and ASTM D 1667; extruded or molded to the configuration of the specified metal panel and in lengths supplied by the metal panel manufacturer.

2.8.4 Metal Closure Strips

Factory fabricated metal closure strips to be the same gauge , color, finish and profile of the specified wall panel.

2.8.5 2.6.6 Joint Sealants

2.8.5.1 Sealants

All field-applied interior adhesives, sealants, primers and sealants used as a filler must meet the requirements of LEED low emitting materials credit. Sealants are to be an approved gun type for use in hand or air-pressure caulking guns at temperatures above 40 degrees F (or frost-free application at temperatures above 10 degrees F with minimum solid content of 85 percent of the total volume. Sealant is to dry with a tough, durable surface skin which permits it to remain soft and pliable underneath, providing a weather-tight joint. No migratory staining is permitted on painted or unpainted metal, stone, glass, vinyl, or wood.

Prime all joints to receive sealants with a compatible one-component or two-component primer as recommended by the metal panel manufacturer.

2.8.5.2 Shop-Applied

Sealant for shop-applied caulking must be an approved gun grade, non-sag one component polysulfide or silicone conforming to ASTM C 920, Type II, and with a curing time to ensure the sealant's plasticity at the time of field erection.

2.8.5.3 Field-Applied

Sealant for field-applied caulking must be an approved gun grade, non-sag one component polysulfide or two-component polyurethane with an initial maximum Shore A durometer hardness of 25, and conforming to ASTM C 920, Type II. Color to match panel colors.

2.8.5.4 Tape Sealant

Pressure sensitive, 100 percent solid with a release paper backing; permanently elastic, non-sagging, non-toxic and non-staining as approved by the metal panel manufacturer.

2.9 SHEET METAL FLASHING AND TRIM

2.9.1 Fabrication

Shop fabricate sheet metal flashing and trim where practicable that apply to design, dimensions, metal, and other characteristics of item indicated.

Obtain field measurements for accurate fit before shop fabrication.

Fabricate sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.

2.10 FINISHES

2.10.1 Appearance of Finished Work

Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 EXECUTION

3.1 EXAMINATION

Before erection proceeds examine with the erector present the concrete foundation dimensions, concrete and/or masonry bearing surfaces, anchor bolt size and placement, survey slab elevation, locations of bearing plates, and other embedment's to receive structural framing with the metal building manufacturer's templates and drawings before erecting any steel components for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

Examine primary and secondary framing to verify that rafters, purlins, angles, channels, and other structural and metal panel support members and anchorages have been installed within alignment tolerances required by metal building manufacturer, UL, ASTM, ASCE 7-10 and as required by the building code for the geographical area where construction will take place.

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

Submit to the Contracting Officer a written report, endorsed by Erector, listing conditions detrimental to performance of the Work.

Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

Provide temporary shoring, guys, braces, and other supports during erection to keep the structural framing secure, plumb, and in alignment against temporary construction loading or loads equal in intensity of the building design loads. Remove temporary support systems when permanent structural framing, connections, and bracing are in place, unless otherwise indicated.

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

Miscellaneous Framing: Install sub-purlins, girts, angles, furring, and other miscellaneous support members or anchorage for the metal roof or wall panels, doors, windows, roof curbs, ventilators and louvers according to

metal building manufacturer's written instructions.

3.3 ERECTION OF STRUCTURAL FRAMING

Erect metal building system according to manufacturer's written erection instructions, approved shop drawings and other erection documents in accordance with MBMA MBSM - "Metal Building Systems Manual".

Do not field cut, drill, or alter structural members without written approval from metal building system manufacturer's professional engineer and the Contracting Officer.

Set structural framing accurately in locations and to elevations indicated and according to AISC 325 specifications. Maintain structural stability of frame during erection.

Clean and roughen concrete and masonry bearing surfaces prior to setting plates. Clean bottom surface of plates.

Align and adjust structural framing before permanent bolt-up and connections. Perform necessary adjustments and alignment to compensate for changes or discrepancies in elevations.

Maintain erection tolerances of structural framing in accordance with ANSI/AISC 360.

3.4 METAL WALL PANEL INSTALLATION

Provide metal wall panels of full length from sill to eave as indicated, unless otherwise indicated or restricted by shipping limitations. Anchor metal wall panels and other components of the Work securely in place, in accordance with MBMA MBSM.

Erect wall panel system in accordance with the approved erection drawings, the printed instructions and safety precautions of the metal building manufacturer.

Sheets are not to be subjected to overloading, abuse, or undue impact. Do not install bent, chipped, or defective sheets.

Sheets must be erected true and plumb and in exact alignment with the horizontal and vertical edges of the building, securely anchored, and with the indicated eave, and sill.

Work is to allow for thermal movement of the wall panel, movement of the building structure, and to provide permanent freedom from noise due to wind pressure.

Field cutting metal wall panels by torch is not permitted.

3.5 ROOF PANEL INSTALLATION

See section 07 61 14.00 20 STEEL STANDING SEAM ROOFING & INSULATION

3.6 METAL PANEL FASTENER INSTALLATION

Anchor metal panels and other components of the Work securely in place,

using manufacturer's approved fasteners according to manufacturers' written instructions.

3.7 FLASHING, TRIM AND CLOSURE INSTALLATION

- a. Comply with performance requirements, manufacturer's written installation instructions, and SMACNA 1793. Provide concealed fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- b. Sheet metalwork is to be accomplished to form weather-tight construction without waves, warps, buckles, fastening stresses or distortion, and allow for expansion and contraction. Cutting, fitting, drilling, and other operations in connection with sheet metal required to accommodate the work of other trades is to be performed by sheet metal mechanics.

3.8 DOOR AND FRAME INSTALLATION

Install doors and frames plumb, rigid, properly aligned, and securely fastened in place according to manufacturer's written instructions. Coordinate installation with metal panel flashings and other components. Caulk and seal perimeter of each door frame with elastomeric sealant compatible with metal panels. Comply with installation requirements in Division 08 - OPENINGS.

3.9 WINDOW INSTALLATION

Install windows plumb, rigid, properly aligned, without warp or rack of frames or sash, and securely fastened in place according to manufacturer's written instructions. Coordinate installation with metal panel flashings and other components. Caulk and seal perimeter of each window frame with elastomeric sealant compatible with for metal panels. Comply with installation requirements in Division 08 - OPENINGS.

3.10 ACCESSORY INSTALLATION

3.10.1 General

Install accessories with positive anchorage to building and weather-tight mounting, and provide for thermal expansion. Coordinate installation with flashings and other components.

3.10.2 Dissimilar Metals

Where dissimilar metals contact one another or corrosive substrates are present, protect against galvanic action by painting dissimilar metal surfaces with bituminous coating, by applying rubberized-asphalt underlayment to each surface, or by other permanent separation techniques as recommended by the metal building manufacturer.

3.10.3 Gutters and Downspouts

Comply with performance requirements, manufacturer's written installation instructions, and install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA 1793 recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.

3.10.4 Roof and Wall Accessories and Specialties

Install roof and wall accessories and specialties complete with necessary hardware, anchors, dampers, weather guards, rain caps, and equipment supports as specified in Division 07 - THERMAL AND MOISTURE PROTECTION, unless other wise indicated.

3.11 CLEAN-UP AND PROTECTION

3.11.1 Structural Framing

Clean all exposed structural framing at completion of installation. Remove metal shavings, filings, bolts, and wires from work area. Remove grease and oil films, excess sealants, handling marks, contamination from steel wool, fittings and drilling debris and scrub the work clean. Exposed metal surfaces to be free of dents, creases, waves, scratch marks, solder or weld marks, and damage to the finish coating.

3.11.2 Metal Panels

Clean all exposed sheet metal work at completion of installation. Remove metal shavings, filings, nails, bolts, and wires from work area. Remove protective coverings/films, grease and oil films, excess sealants, handling marks, contamination from steel wool, fittings and drilling debris and scrub the work clean. Exposed metal surfaces to be free of dents, creases, waves, scratch marks, solder or weld marks, and damage to the finish coating.

3.11.3 Touch-Up Painting

After erection, promptly clean, prepare, and prime or re-prime field connections, rust spots, and abraded surfaces of prime-painted structural framing and accessories. Clean and touch-up paint .

3.12 WASTE MANAGEMENT

Separate waste in accordance with the Waste Management Plan, placing copper materials, ferrous materials, and galvanized sheet metal in designated areas for reuse. Close and seal tightly all partly used adhesives and solvents; store protected in a well-ventilated, fire-safe area at moderate temperature.

3.13 SPECIAL INSPECTION AND TESTING FOR SEISMIC-RESISTING SYSTEMS

Special inspections and testing for seismic-resisting systems and components shall be done in accordance with Section 01 45 35 SPECIAL INSPECTION FOR SEISMIC-RESISTING SYSTEMS.

3.14 WARRANTY

3.14.1 MANUFACTURER'S WARRANTY

Submit all manufacturers' signed warranties to Contracting Officer prior to final commissioning and acceptance.

3.14.2 CONTRACTOR'S WARRANTY for INSTALLATION

Submit contractor's warranty for installation to the Contracting Officer

prior to final commissioning and acceptance.

AMDT 0004

3.14.3 CONTRACTOR'S **FIVE (5)** YEAR NO PENAL SUM WARRANTY

CONTRACTOR'S **FIVE (5)** YEAR NO PENAL SUM WARRANTY
FOR
METAL BUILDING SYSTEM

FACILITY DESCRIPTION: _____

BUILDING NUMBER: _____

CORPS OF ENGINEERS CONTRACT NUMBER: _____

CONTRACTOR

CONTRACTOR: _____

ADDRESS: _____

POINT OF CONTACT: _____

TELEPHONE NUMBER: _____

OWNER

OWNER: _____

ADDRESS: _____

POINT OF CONTACT: _____

TELEPHONE NUMBER: _____

CONSTRUCTION AGENT

CONSTRUCTION AGENT: _____

ADDRESS: _____

POINT OF CONTACT: _____

TELEPHONE NUMBER: _____

CONTRACTOR'S **FIVE (5)** YEAR NO PENAL SUM WARRANTY
FOR
METAL BUILDING SYSTEM
(continued)

THE METAL BUILDING SYSTEM INSTALLED ON THE ABOVE NAMED BUILDING IS WARRANTED BY _____ FOR A PERIOD OF **FIVE 5** YEARS AGAINST WORKMANSHIP AND MATERIAL DEFICIENCIES, WIND DAMAGE AND STRUCTURAL FAILURE WITHIN PROJECT SPECIFIED DESIGN LOADS, AND LEAKAGE. THE METAL BUILDING SYSTEM COVERED UNDER THIS WARRANTY INCLUDES, BUT IS NOT LIMITED TO, THE FOLLOWING:

FRAMING AND STRUCTURAL MEMBERS, ROOFING AND SIDING PANELS AND SEAMS, INTERIOR OR EXTERIOR GUTTERS AND DOWNSPOUTS, ACCESSORIES, TRIM, FLASHINGS AND MISCELLANEOUS BUILDING CLOSURE ITEMS SUCH AS DOORS AND WINDOWS (WHEN FURNISHED BY THE MANUFACTURER), CONNECTORS, COMPONENTS, AND FASTENERS, AND OTHER SYSTEM COMPONENTS AND ASSEMBLIES INSTALLED TO PROVIDE A WEATHERTIGHT SYSTEM; AND ITEMS SPECIFIED IN OTHER SECTIONS OF THESE SPECIFICATIONS THAT BECOME PART OF THE METAL BUILDING SYSTEM.

ALL MATERIAL AND WORKMANSHIP DEFICIENCIES, SYSTEM DETERIORATION CAUSED BY EXPOSURE TO THE ELEMENTS AND/OR INADEQUATE RESISTANCE TO SPECIFIED SERVICE DESIGN LOADS, WATER LEAKS AND WIND UPLIFT DAMAGE MUST BE REPAIRED AS APPROVED BY THE CONTRACTING OFFICER.

ALL MATERIAL DEFICIENCIES, WIND DAMAGE, STRUCTURAL FAILURE AND LEAKAGE ASSOCIATED WITH THE METAL BUILDING SYSTEM COVERED UNDER THIS WARRANTY MUST BE REPAIRED AS APPROVED BY THE CONTRACTING OFFICER.

THIS WARRANTY COVERS THE ENTIRE COST OF REPAIR OR REPLACEMENT, INCLUDING ALL MATERIAL, LABOR, AND RELATED MARKUPS. THE ABOVE REFERENCED WARRANTY COMMENCED ON THE DATE OF FINAL ACCEPTANCE ON _____ AND WILL REMAIN IN EFFECT FOR STATED DURATION FROM THIS DATE.

SIGNED, DATED, AND NOTARIZED (BY COMPANY PRESIDENT)

(Company President)

(Date)

CONTRACTOR'S **FIVE (5)** YEAR NO PENAL SUM WARRANTY
FOR
METAL BUILDING SYSTEM
(continued)

THE CONTRACTOR HEREBY SUPPLEMENTS THIS WARRANTY WITH WRITTEN WARRANTIES FROM THE MANUFACTURER AND/OR INSTALLER OF THE METAL BUILDING SYSTEM, WHICH IS SUBMITTED ALONG WITH THE CONTRACTOR'S WARRANTY. HOWEVER, THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THIS WARRANTY AS OUTLINED IN THE SPECIFICATIONS AND AS INDICATED IN THIS WARRANTY.

EXCLUSIONS FROM COVERAGE

1. NATURAL DISASTERS, ACTS OF GOD (LIGHTNING, FIRE, EXPLOSIONS, SUSTAINED WIND FORCES IN EXCESS OF THE DESIGN CRITERIA, EARTHQUAKES, AND HAIL).
2. ACTS OF NEGLIGENCE OR ABUSE OR MISUSE BY GOVERNMENT OR OTHER PERSONNEL, INCLUDING ACCIDENTS, VANDALISM, CIVIL DISOBEDIENCE, WAR, OR DAMAGE CAUSED BY FALLING OBJECTS.
3. DAMAGE BY STRUCTURAL FAILURE, SETTLEMENT, MOVEMENT, DISTORTION, WARPAGE, OR DISPLACEMENT OF THE BUILDING STRUCTURE OR ALTERATIONS MADE TO THE BUILDING.
4. CORROSION CAUSED BY EXPOSURE TO CORROSIVE CHEMICALS, ASH OR FUMES GENERATED OR RELEASED INSIDE OR OUTSIDE THE BUILDING FROM CHEMICAL PLANTS, FOUNDRIES, PLATING WORKS, KILNS, FERTILIZER FACTORIES, PAPER PLANTS, AND THE LIKE.
5. FAILURE OF ANY PART OF THE BUILDING SYSTEM DUE TO ACTIONS BY THE OWNER WHICH INHIBIT FREE DRAINAGE FROM THE ROOF, GUTTERS AND DOWNSPOUTS; OR CONDITIONS WHICH CREATE PONDING WATER ON THE ROOF OR AGAINST THE BUILDING SIDING.
6. THIS WARRANTY APPLIES TO THE METAL BUILDING SYSTEM. IT DOES NOT INCLUDE ANY CONSEQUENTIAL DAMAGE TO THE BUILDING INTERIOR OR CONTENTS WHICH IS COVERED BY THE WARRANTY OF CONSTRUCTION CLAUSE INCLUDED IN THIS CONTRACT.
7. THIS WARRANTY CANNOT BE TRANSFERRED TO ANOTHER OWNER WITHOUT WRITTEN CONSENT OF THE CONTRACTOR AND THIS WARRANTY AND THE CONTRACT PROVISIONS TAKE PRECEDENCE OVER ANY CONFLICTS WITH STATE STATUTES. REPORTS OF LEAKS AND BUILDING SYSTEM DEFICIENCIES MUST BE RESPONDED TO WITHIN 48 HOURS OF RECEIPT OF NOTICE BY TELEPHONE OR IN WRITING FROM EITHER THE OWNER, OR CONTRACTING OFFICER. EMERGENCY REPAIRS, TO PREVENT FURTHER ROOF LEAKS, MUST BE INITIATED IMMEDIATELY; A WRITTEN PLAN MUST BE SUBMITTED FOR APPROVAL TO REPAIR OR REPLACE THIS SSSMR SYSTEM WITHIN SEVEN CALENDAR DAYS. ACTUAL WORK FOR PERMANENT REPAIRS OR REPLACEMENT MUST BE STARTED WITHIN 30 DAYS AFTER RECEIPT OF NOTICE, AND COMPLETED WITHIN A REASONABLE TIME FRAME. IF THE CONTRACTOR FAILS TO ADEQUATELY RESPOND TO THE WARRANTY PROVISIONS, AS STATED

CONTRACTOR'S **FIVE (5)** YEAR NO PENAL SUM WARRANTY
FOR
METAL BUILDING SYSTEM
(Exclusions from Coverage Continued)

IN THE CONTRACT AND AS CONTAINED HEREIN, THE CONTRACTING OFFICER MAY HAVE THE METAL BUILDING SYSTEM REPLACED OR REPAIRED BY OTHERS AND CHARGE THE COST TO THE CONTRACTOR. IN THE EVENT THE CONTRACTOR DISPUTES THE EXISTENCE OF A WARRANTABLE DEFECT, THE CONTRACTOR MAY CHALLENGE THE OWNER'S DEMAND FOR REPAIRS AND/OR REPLACEMENT DIRECTED BY THE OWNER OR CONTRACTING OFFICER EITHER BY REQUESTING A CONTRACTING OFFICER'S DECISION, UNDER THE CONTRACT DISPUTES ACT, OR BY REQUESTING THAT AN ARBITRATOR RESOLVE THE ISSUE. THE REQUEST FOR AN ARBITRATOR MUST BE MADE WITHIN 48 HOURS OF BEING NOTIFIED OF THE DISPUTED DEFECTS. UPON BEING INVOKED THE PARTIES MUST, WITHIN 10 DAYS JOINTLY REQUEST A LIST OF FIVE (5) ARBITRATORS FROM THE FEDERAL MEDIATION AND CONCILIATION SERVICE. THE PARTIES MUST CONFER WITHIN 10 DAYS AFTER RECEIPT OF THE LIST TO SEEK AGREEMENT ON AN ARBITRATOR. IF THE PARTIES CANNOT AGREE ON AN ARBITRATOR, THE CONTRACTING OFFICER AND THE PRESIDENT OF THE CONTRACTOR'S COMPANY WILL STRIKE ONE (1) NAME FROM THE LIST ALTERNATIVELY UNTIL ONE NAME REMAINS. THE REMAINING PERSON WILL BE THE DULY SELECTED ARBITRATOR. THE COSTS OF THE ARBITRATION, INCLUDING THE ARBITRATOR'S FEE AND EXPENSES, COURT REPORTER, COURTROOM OR SITE SELECTED ETC., MUST BE BORNE EQUALLY BETWEEN THE PARTIES. EITHER PARTY DESIRING A COPY OF THE TRANSCRIPT MUST PAY FOR THE TRANSCRIPT. A HEARING WILL BE HELD AS SOON AS THE PARTIES CAN MUTUALLY AGREE. A WRITTEN ARBITRATOR'S DECISION WILL BE REQUESTED NOT LATER THAN 30 DAYS FOLLOWING THE HEARING. THE DECISION OF THE ARBITRATOR WILL NOT BE BINDING; HOWEVER, IT WILL BE ADMISSIBLE IN ANY SUBSEQUENT APPEAL UNDER THE CONTRACT DISPUTES ACT.

POST A FRAMED COPY OF THIS WARRANTY IN THE MECHANICAL ROOM OR OTHER APPROVED LOCATION DURING THE ENTIRE WARRANTY PERIOD.

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-- End of Section --