V. GUIDE SPECIFICATIONS

This Guide Specification is intended to be used for the development of an office master specification or in the preparation of specifications for a particular project. In either case, the Guide Specification must be edited to fit the conditions of use. Particular attention should be given to the deletion of inapplicable provisions, choosing appropriate options where indicated, and including necessary requirements where blank spaces are provided. Include necessary items related to a particular project.

SECTION 13122

DISCLAIMER: Use of this Specification is totally voluntary. Each building designer retains the prerogative to choose their own design and commercial practices and the responsibility to design and specify building systems to comply with applicable state and local codes, specifications and safety considerations.

Although every effort has been made to present accurate and sound information, MBMA assumes no responsibility whatsoever for the application of this information to the design, specification or construction of any specific building. *MBMA expressly disclaims all liability for damages of any sort whether direct, indirect or consequential, arising out of the use, reference to or reliance on this Specification or any of its contents.* **MBMA makes no warranty, express or implied, as to any particular building system or this specification. MBMA specifically disclaims any warranties of merchantability or fitness for a particular purpose.**

Specifier: *The notation [**Specifier Note:**] means that the following text is a specifier's note or sample.*

A. This specification includes metal building systems designed by the manufacturer and supplied by a single source. The system includes building frames, steel wall and roof systems. Cladding may be other producer supplied under other sections of the specification. Specifications for doors, windows and other fenestrations are included. This specification does not include foundations, floor slab, plumbing, electrical, HVAC, or interior finishing.

B. This Section includes performance and prescriptive type specifications. Edit to avoid conflicting requirements.

C. This specification covers the design, material, fabrication, shipment and erection of metal building systems. For the material, erection and other fieldwork included and excluded in the metal building system refer to MBMA Common Industry Practices.

GENERAL

1.1 SECTION INCLUDES

[***Specifier Note:*** *Use this Article carefully; restrict statements to describe components used to assemble the system*]**.**

A. [Clear span rigid frame.] [Modular rigid frame supported with intermediate columns.] [Truss systems.] [.]

B. [_____ minimum clearance at knee].
[_____ minimum clearance haunch to haunch].
[_____ inch depth straight exterior columns].
[_____ critical dimension at].

C. Bay spacing of [____] ft. [_____] m [as shown on drawings].

D. Roof Slope: [1/4] [1/2] [1] [2] [4] [ ] in 12 ([1.5°] [3°] [5°] [10°] [20°] [°]).

E. Primary Framing: Rigid frame of rafter beams and columns, [intermediate columns] [braced end frames] [end wall columns] [canopy beams] [ ].

F. Secondary Framing: [Purlins], [girts], [eave struts], [flange bracing], [ ], and other items detailed.

G. Lateral Bracing: Horizontal loads not resisted by main frame action shall be resisted by [cable] [rod] and/or [diaphragm] [portal frames] [fixed base columns] [ ] in the sidewall. [Diaphragm] and/or [cable] [rod] [portal frame] [fixed base columns] [ ] in the endwall. [Cable] [rod] and/or [diaphragm] [ ] in the roof.

H. Wall and Roof System: Preformed steel panels [insulation], [liner sheets], and accessory components.

I. Accessories: [Ventilators], [louvers], [windows], [doors], [hardware], [ ].

1.2 RELATED SECTIONS

[***Specifier Note:*** *List the related sections that specify the installation of products specified in this specification and indicate the specific items.*]

A. Section [03001-03900]: Concrete [footings] [grade beams] [floor slab]. [___]
B. Section [03150]: Placement of [anchor bolts.] [leveling plates.] [grout].
C. Section [05001-05800]: [Steel bar joist] [ ] metal decking, [ ] [ ]
D. Section [07610-07650]: [Metal roofing] [ ] flashing and trim [.]
E. Section [07915-]: [Joint sealers] [.]
F. Section [08100-08480]: [Overhead] [ ] doors, [roll-up] [ ] hangar [ ]
G. Section [08505-08507]: [Metal] [vinyl] windows [ ] [ ]
H. Section [08620-08675]: [Skylights] [ ] [translucent panels] [wallights] [ ]
I. Section [09900-09995] Painting: Finish painting [of primed steel surfaces] [and] [.] [.]
J. Section [15150-15164]: Drainage piping from downspouts to [municipal sewers.] [ ]

1.3 REFERENCES

[***Specifier Note:*** *List reference standards that are included within the text of this Specification.* [*Edit the following as required for project conditions.*] *If a later addendum of these standards is available, this later addendum shall be a part of this specification.*

A. AISI - *Specification for the Design of Cold-Formed Steel Structural* Members - 1996 Edition with 1999 Addendum.
B. AISC - *Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design,* 1989.
C. AISC - Steel Design Guide Series 3 - Serviceability Design Considerations for Low-Rise Buildings, 1990.
D. ASTM A36 - Specification for Carbon Structural Steel, 2000.
E. ASTM A123 - Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products, 2000.
F. ASTM A153 - Specification for Zinc Coating (Hot Dip) on Iron and steel Hardware, 2000.

G. ASTM A307 - Specification for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength, 2000.
H. ASTM A325 - Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength, 2000.
I. ASTM A463 - Specification for Steel Sheet, Aluminum-Coated, by the Hot-Dip Process, 2000.
J. ASTM A475 - Specification for Zinc-Coated Steel Wire Strand.
K. ASTM A490 - Specification for Heat Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength, 2000.
L. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes, 1999.
M. ASTM A501 - Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing, 1999.
N. ASTM A529 - Specification for High-Strength Carbon-Manganese Steel of Structural Quality, 2000.
O. ASTM A572 - Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel, 2000.
P. ASTM A653 - Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanized) by the Hot-Dip Process, 2000.
Q. ASTM A792 - Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process, 1999.
R. ASTM A1011 - Specification for Steel Sheet and Strip Hot Rolled Carbon, Structural High Strength Low-Alloy and High Strength Low-Alloy with Improved Formability, 2000.
S. ASTM C665 - Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing, 1998.
T. ASTM D1494 - Test Method for Diffused Light Transmission Factor of Reinforced Plastic panels, 1997.
U. ASTM E1514 - Specification for Structural Standing Seam Steel Roof panel Systems, 1998.
V. ASTM E1592 - Test method for Structural Performance of Sheet Metal Roof and Siding Systems by Uniform Static Air Pressure Difference, 1998.
W. ASTM E1646 - Test Method for Water Penetration of Exterior Metal Roof Panel Systems by Uniform Static Air Pressure Difference, 1995.
X. ASTM E1680 - Test Method of Rate of Air Leakage through Exterior metal Roof Panel Systems, 1995.
Y. AWS A2.4 - Standard Welding Symbols, 1998.
Z. AWS D1.1 - Structural Welding Code - Steel , 2000.
AA. AWS D1.3 - Structural Welding Code - Sheet Steel, 1998.
BB. MBMA Metal Building Systems Manual, 2002.
CC. NAIMA 202 - Standard for Flexible Fiberglass Insulation Systems in Metal Buildings, 2000.
DD. SJI (Steel Joist Institute) - Standard Specifications, Load Tables and Weight Tables for Steel Joists and Joist Girders, 40th Edition, 1994.

EE. SSPC (Society for Protective Coatings) - SP-2 - Specification for Hand Tool Cleaning, 1995 (Part of Steel Structures Painting Manual, Vol. Two)
FF. SSPC - Paint 15 – Steel Joist Shop Primer; Society for Protective Coatings; 1999 (Part of Steel Structures Painting Manual, Vol. Two)
GG. SSPC – Paint 20 – Zinc-Rich Primers (Type I, "Inorganic", and Type II, "Organic"); Society for Protective Coatings; 1991 (Part of Steel Structures Painting Manual, Vol. Two).
HH. UL 580 - Tests for Uplift Resistance of Roof Assemblies, 1994.

1.4 DESIGN REQUIREMENTS

[***Specifier Note:*** *Use this Article carefully; restrict statements to identify system design requirements only. Refer to Section 2.01B and 2.02C for specification of insulation thickness.*]

A. The building shall be designed by the Manufacturer as a complete system. Members and connections not indicated on the drawings shall be the responsibility of the Manufacturer and/or Contractor. All components of the system shall be supplied or specified by the same manufacturer.
B. Design Code:
Design load application shall be in accordance with [***Specifier Note:*** *Choose one]*
[IBC] [MBMA] [SBCCI] [UBC] [BOCA] [ASCE-7] or an applicable national or local building code.
C. Dead Loads:
The dead load shall be the weight of the Metal Building System and as determined by the system manufacturer.

D. Collateral Loads:
The collateral load shall be [psf] or as shown on the contract drawings. Collateral Loads shall not be applied to the roof panels.

[***Specifier Note:*** *Collateral Loads consist of Sprinklers, Mechanical and Electrical Systems, and Ceilings.*]

E. Live Loads:
The building system shall be capable of supporting a minimum uniform live load of [20 psf., reducible/non-reducible] [psf].
F. Snow Loads:
The design [ground] [roof] snow loads shall be [psf] or as defined on the contract drawings.

[***Specifier Note:*** *All sources of snow drifting should be clearly identified in the contract documents, i.e. adjacent structures, roof height changes, etc.*]

G. Wind Loads:
The design wind speed for the metal building system shall be [mph] [3 second gust/fastest mile] or as defined on the contract documents.

[***Specifier Note:*** *The design wind speed must be identified as either "fastest mile" or 3-second gust as appropriate to the applicable code.*]

H. Seismic Loads:
Seismic load shall be determined based upon a [seismic zone factor Z/spectral response acceleration factors S_s, S_1] [,]

I. Rainfall Intensity:
All exterior gutters and downspouts shall be designed for rainfall intensity based upon a 5-year recurrence interval for a five-minute duration. All interior gutters, valleys and downspouts shall be designed for rainfall intensity based upon a 25-year recurrence interval based on a five-minute duration.

[***Specifier Note:*** *Rainfall intensity can be found in the MBMA Metal Building Systems Manual.*]

J. Deflection requirements shall be in accordance with the applicable provisions of the AISC Steel Design Guide Series 3 - Serviceability Design Considerations for Low-Rise Buildings [the specified building code].

[***Specifiers Note:*** *L is the span of the element between support points, and H is the eave height of the building. For 10-year wind values, use 75% of the 50-year wind pressure*].

-OR-

J. Deflections shall be limited as follows:
Primary Framing:
L/[180] [ ] for roof snow load.
H/[60] [ ] for 10-year wind load.
Secondary Framing:
L/[150] [ ] for roof dead load + roof snow load; but not less than that required to maintain positive drainage for the greater of dead load + 1/2 roof snow load or dead load + 5 PSF.
L/[120] [ ]for 10-year wind load on walls and roof.
L/[180] [ ] for roof snow load (but not less than 20 PSF) on sheeting.

K. Thermal Effects:
Standing Seam roof panels shall be free to move in response to the expansion and contraction forces resulting from a temperature variation. Assembly to permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to temperature range of [ ] degrees F [ ] degrees C.

L. Site Conditions:
The following site features and adjacent structures must be considered in the design. Building is feet away from a wide x long x high adjacent building, as shown on drawings.

1.5 SUBMITTALS

Note: All manufacture drawings [and design calculations] shall bear the professional seal and signature of a licensed professional engineer registered in the state of [ ].

A. Submit anchor bolt placement plan, column reactions [,] in advance of erection drawings.

[***Specifier Note:*** *Do not request additional submittals if Contract Documents sufficiently describe the products of this Section. Require only submittal of material which must be verified by the specifier.*]

B. Product Data: Provide data on [profiles], [component dimensions], [fasteners], [color selection] [and] [.]

[***Specifier Note:*** *When manufacturer's instructions for specific installation requirements are referenced in PART 3 - EXECUTION, include the following request for submittal of those instructions. Edit the PART 3 statements to avoid conflict with Manufacturer's instructions.*]

C. Manufacturer's Installation Instructions: Indicate preparation requirements, assembly sequence, [and] [.]

D. Shop or Erection Drawings: Indicate assembly dimensions, locations of structural members, connections, attachments, openings, cambers, loads, and [ ]; wall and roof system dimensions, panel layout, general construction details, anchorages and method of anchorage, installation [and]; framing anchor bolt settings, sizes, and locations from datum, foundation loads and [ ]; indicate field welded connections with AWS A2.4 welding symbols; indicate net weld lengths.

1.6 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with MBMA Metal Building Systems Manual, and, for items not covered, AISC - Specification for Structural Steel Buildings.

1.7 QUALIFICATIONS

A. Manufacturer: The company manufacturing the products specified in this Section [shall have a minimum of [ ] year[s] experience in the manufacture of steel building systems.] The manufacturing company shall be certified under the American Institute of Steel Construction's Category MB Certification Program.

B. Structural framing and covering shall be the design of a licensed Professional Engineer experienced in design of this work.

C. Erector shall have specialized experience in the erection of steel building systems for a period of at least [ ] years.

[***Specifier Note:*** *Include the following section for projects involving additions to or adjacent to existing structures.*]

1.8 FIELD MEASUREMENTS

A. Metal building contractor [ ] shall verify that field measurements are as indicated [in contract] [on erection drawings].] [instructed by the manufacturer.]

1.9 WARRANTY

[***Specifier Note:*** *Panel warranties generally are available to include coverage against perforations. Paint warranties generally include coverage for exterior pre-finished surfaces to cover pre-finished color coat against chipping, cracking or crazing, blistering, peeling, chalking, or fading. Roof warranties may be available through the metal building contractor to include coverage for weather tightness of building enclosure elements after installation.*]

A. Building manufacturer shall provide manufacturer's standard material warranty.

-OR-

A. Building manufacturer shall provide a material warranty of ___ year[s].

B. Metal building contractor shall provide a workmanship warranty of __ year[s].

1.10 ADMINISTRATION

A. All nomenclature shall conform to the MBMA Metal Building Systems Manual.

B. Coordination and administration of the work shall be in accordance with the MBMA Metal Building Systems Manual - Common Industry Practices.

PRODUCTS

[***Specifier Note:*** *Edit the following descriptive specifications to identify project requirements.*]

2.1 MATERIALS - ROOF SYSTEM

[***Specifier Note:*** *The following material listing is oriented to site assembled roof component assemblies. Manufacturer's standard fasteners must be compatible with panel material and performance level specified.*]

A. Sheet Steel Stock: [Galvanized coated to [G90] [ ] designation] [zinc-aluminum coated to [AZ55] [ ] designation] [aluminized] as required by manufacturer's design.

B. Roof Insulation: [ASTM C665], [semi-rigid] [batt] [blanket] glass fiber type, [unfaced] [faced with reinforced [foil] [white vinyl]] [UL flame spread classification of 25 or less where exposed], [friction fit], [ ] ____ inches [ ] mm thick, with R-value of [ ].

-OR-

B. Roof Insulation: Rigid board type as manufactured by __ with R value of [ ], inches [ ] mm thick.

C. Through Fastened Roofing: Minimum ___ gauge [ ] inch [ ] mm metal thickness [ ] profile, [UL 90 rated] [lapped] [male/female] edges] [with continuous sealant.] [field applied].

-OR-

C. Standing Seam Roofing: Minimum ___ gauge [ ] inch [ ] mm metal thickness [ ] profile, [UL 90 rated] [ASTM 1592 tested to psf] [snap seam] [mechanical seam] joining sides, with factory applied sealant.

D. Soffit Panels: Minimum ____ gauge [ ] inch [ ] mm metal thickness, [flat] [ ] profile [indicated], [perforated for ventilation.] [unperforated.]

E. Closures: Manufacturer's standard type, closed cell or metal.

F. Fasteners: Manufacturer's standard type, [ ]. Size and design to maintain load and weather tightness requirements. Fasteners to be

[stainless steel, head and shank] [stainless steel cap with carbon shank] [carbon steel, plated] [self tapping] [self drilling and tapping].

G. Sealant Manufacturer's standard type.

[***Specifier Note*** *Include H & I if panel is to have a color finish. Note:: PVDF (polyvinylidene fluoride) is a premium finish and is normally furnished at an increased cost and delivery time.*] *Color must be specified.*

H. Exterior Surfaces of Roof Panels: Precoated steel of [polyester] [silicone polyester] [polyvinylidene fluoride (PVDF)] [ ] finish, [ ] color [as selected from manufacturer's standard colors.]

I. Interior Surfaces of Roof Panels: Precoated steel with wash coat of [(polyester)
(acrylic)] [silicone polyester] manufacturer's standard finish.

2.2 MATERIALS - WALL SYSTEMS

A. Sheet Steel Stock: [Galvanized coated to [G90] [ ] designation] [zinc-aluminum
coated to [AZ55] [ ] designation] [aluminized] as required by manufacturer's design.

B. Wall Insulation: [ASTM C665]. [semi-rigid], [batt] [blanket] glass fiber type, [unfaced] [faced with reinforced [foil] [white vinyl] [UL flamespread classification of 25 or less where exposed, [friction fit] [ ] inches [ ] mm thick, with R value of [ ].

-OR-

B. Wall Insulation: Rigid board type as manufactured by __ with R value of ____ [ ] inches [ ] mm thick.

C. Siding: Minimum [ ] gauge [ ] inch [ ] mm metal thickness, [ ] profile [indicated], [ ] inch [ ] mm deep, [[lapped] [male/female] edges].

D. Liner: Minimum [ ] gauge [ ] inch [ ] mm metal thickness. [flat] [perforated] profile [indicated], [lapped] [male/female] edges.]

E. Closures: Manufacturer's standard type, closed cell or metal.

F. Fasteners: Manufacturer's standard type, [ ]. Size and design to maintain load and weather tightness requirements. Fasteners to be

[stainless steel head and shank] [stainless steel cap with carbon shank] [carbon steel, plated] [self tapping] [self drilling and tapping.]

[***Specifier Note:*** *Include G &H if panel is to have a color finish. Note: PVDF is a premium finish and is normally furnished at an increased cost and delivery time.*]

G. Exterior Surfaces of Wall Panels: Precoated steel of [[polyester] [acrylic]] [silicone polyester] [polyvinylidene fluoride (PVDF)] [ ] finish, [ ] color [as selected from manufacturer's standard colors.]

H. Interior Surfaces of Wall Panels: Precoated steel with wash coat of [polyester]
[acrylic] [silicone polyester] manufacturer's standard finish.

2.3 MATERIALS - TRIM

A. Flashings, Internal and External Corners, Closure Pieces, [Fascia], [Infills], [Caps], and [ ]: Same material and finish as adjacent material, profile [to suit system.] [formed as detailed.] [] color as selected from manufacturer's standards.

2.4 MATERIALS - METAL PERSONNEL DOORS AND FRAMES

[***Specifier Note:*** *Select one of the specifying methods indicated below. If the first method is used, ensure manufacturer's product criteria is accurately described.*]

Doors and frames shall be designed by the manufacturer to meet the wind load provisions as specified in Section 1.04G. Doors shall be designed using beam action to transfer loads from jamb to jamb.

A. Building system manufacturer's standard door and frame type as shown on [plan], [schedules].

-OR-

A. Building system manufacturer's:

	Type	Size	Model No.
1.	[_____]	[_____]	Model [_____]
2.	[_____]	[_____]	Model [_____]
3.	[_____]	[_____]	Model [_____]

2.5 MATERIALS - DOORS AND FRAMES, OTHER THAN PERSONNEL

Doors and frames shall be designed by the manufacturer to meet the wind load provisions as specified in Section 1.04G. Doors shall be designed using beam action to transfer loads from jamb to jamb.

A. Door:

	Type	Manufacturer	Size	Model No.
1.	[_____]	[_____]	[_____]	Model [_____]
2.	[_____]	[_____]	[_____]	Model [_____]
3.	[_____]	[_____]	[_____]	Model [_____]

B. Door Frame: Building systems manufacturer's standard [ ].

2.6 MATERIALS - WINDOWS

[***Specifiers Note:*** *Select one of the specifying methods indicated below. If the first method is used, ensure manufacturer's product criteria is accurately described.*]

Windows shall be designed by the manufacturer to meet the wind load provisions as specified in Section 1.04G.

A. Building systems manufacturer's standard window and frame type as shown on[plans], [schedules].

-OR-

A. Building system manufacturer's:

	Type	Size	Model No.
1.	[_____]	[_____]	Model [_____]
2.	[_____]	[_____]	Model [_____]
3.	[_____]	[_____]	Model [_____]

2.7 MATERIALS - TRANSLUCENT PANELS

A. Translucent roof panels shall be [ ] [clear] [white] translucent [insulated] [UL 90 rated] panels capable of sustaining a 200 pound concentrated load on a one foot square located anywhere on the panel without rupture. Translucent panels shall be compatible with the steel roof panels. Panel shall be [8] [ ] oz. per square foot and shall have a fire retardant rating of _____. The minimum variable light transmission shall be [60%] [ ] when measured in accordance with ASTM D1494.

B. Translucent wall panels shall be [ ] [clear] [white] translucent [insulated] panels and be compatible with the steel wall panels. Panel shall be [8] [ ] oz. per square foot and shall have a fire retardant rating of _____ . The minimum variable light transmission shall be [60%] [ ] when measured in accordance with ASTM D1494.

2.8 MATERIALS - ACCESSORIES

[***Specifier Note:*** *Describe ventilator type to be used; continuous ridge type, intermittent ridge type, end wall type, dampered, exhaust grilles, gravity vent, screens, operators.*]

A. Ventilator: [.] [linear ridge] [continuous ridge] [round stationary] [ ]
with [screens] [dampers] [operators].

B. Wall Louvers: [ ] type ["Z"] ["Y"] [ ] blade design, [same finish as adjacent [material] [ ], [with steel mesh [bird] [insect] screen and frame], [blank sheet metal] [ ] at unused portions.
Louvers shall be designed by the manufacturer to meet the wind load provisions as specified in Section 1.04G.

C. Provide framing for [ ] openings.

D. Curbs for HVAC equipment, skylights, hatches, etc. shall be compatible with steel roof panel and sealed against water penetration in accordance with building manufacturer's instructions. Curbs shall accommodate the expansion and contraction movement of standing seam roofs.

2.9 FABRICATION - PRIMARY FRAMING

A. Framing Members: Clean and prepare in accordance with SSPC-SP2 as a minimum, and [coat with primer meeting SSPC No. 15] [coat with building manufacturer's standard primer.] [galvanize to ASTM A123, Class B.] [supply black (unpainted).] Note: Galvanizing may require further preparation.

B. Hot rolled members shall be fabricated in accordance with AISC Specification for pipe, tube, and rolled structural shapes and [primed] [galvanized] [supplied unpainted].

C. Fabricate built-up members in accordance with MBMA Metal Building Systems Manual, Common Industry Practices.

2.10 FABRICATION - SECONDARY

A. Framing Members: Clean and prepare in accordance with SSPC-SP2, as a minimum, and [coat with primer meeting SSPC No. 15] [coat with building manufacturer's standard primer.] [galvanize to ASTM A123, Class B.] [supply black (unpainted).] Note: Galvanizing may require further preparation. [Members formed from galvanized flat material.]

B. Cold Formed Members: Cold formed structural shapes shall be fabricated in accordance with MBMA Metal Building Systems Manual, Common Industry Practices.

2.11 FABRICATION - GUTTERS, DOWNSPOUTS, FLASHINGS AND TRIM

A. Fabricate gutters, flashings and trims from manufacturer's standard [__]. Color to be selected from manufacturer's standard offering.

B. Fabricate or furnish downspouts with elbows from manufacturer's standard [__]. Color to be selected from manufacturer's standard offering.

C. Form gutters and downspouts (and scuppers) of [___] profile and size [indicated] to collect and remove water. Fabricate with connection pieces.

D. Form flashing and trim sections in maximum possible lengths. Hem exposed edges. [Allow for expansion at joints.]

E. Fabricate or furnish gutter support straps of manufacturer's standard material, design and finish.

F. Fabricate or furnish downspout clips or support straps of manufacturer's standard material. Finish color as selected.

EXECUTION

3.1 EXECUTION

A. Verify site conditions under provisions of Section [ ].

B. Verify that foundation, floor slab, mechanical and electrical utilities, and placed anchors are in correct position and properly squared.

C. Provide access to the work as scheduled for owner provided inspections, if required. The cost of any required inspections is the responsibility of the owner.

D. Do not proceed until unsatisfactory conditions have been corrected.

3.2 ERECTION - FRAMING

A. Erect framing in accordance with MBMA Metal Building Systems Manual, Common Industry Practices.

B. Use templates for accurate setting of anchor bolts. Level bearing plate area with steel wedges or shims, and grout. Check all previously placed anchorages.

C. Erect building frame true and level with vertical members plumb and bracing properly installed. Maintain structural stability of frame during erection.

D. Ream holes requiring enlargement to admit bolts. Burned holes for bolted connections are not permitted without written approval by designer. Burned holes to be reamed.

E. Tighten bolts and nuts in accordance with "Specification for structural joints using ASTM A325 or A490 bolts" using specified procedure. [Snug Tight] [Turn-of-the-nut tightening] [Calibrated wrench tightening] [Tension control bolts] or [Direct tension indicator washers] may be used to assure correct tightening.

F. The erector shall furnish temporary guys and bracing where needed for squaring, plumbing, and securing the structural framing against loads, such as wind loads acting on the exposed framing and seismic forces, as well as loads due to erection and erection operation, but not including loads resulting from the performance of work by others. Bracing furnished by the manufacturer for the metal building system cannot be assumed to be adequate during erection and are not to be used to pull frames into plumb condition.

The temporary guys, braces, falseworks and cribbing are the property of the erector, and the erector shall remove them immediately upon completion of erection.

G. Do not field cut or modify structural members without approval of the metal building manufacturer.

H. After erection, erector to prime welds, abrasions, and surfaces not [shop primed.] [galvanized.] or needing touch-up.

3.3 ERECTION - WALL AND ROOFING SYSTEMS

A. Install all wall and roofing systems in accordance with manufacturer's instructions and details.

B. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.

C. Fasten cladding system to structural supports, using proper fasteners aligned level and plumb.

D. Set purlins and girts at right angle and bolt to appropriate clips. Attach to clips as required to satisfy design loads and as shown on drawings.

E. Place screw down roof panels at right angle to purlins and girts. Attach and plumb wall panels as shown on drawings. Maintain consistent [ ] module coverage for entire length of wall. Predrill panels. Lap panel ends minimum [ ] inches on roof and [ ] inches on walls. Place end laps over purlins or girts. Apply butyl roof panel side and end lap sealant between panel ends and side laps to provide water-tight installation per details furnished.

F. Place Standing Seam Roof panels at right angle to purlins. Attach with sliding concealed clip where expansion and contraction must be accounted for. Lap panel ends [____] inches as determined by manufacturer's standard and panel notch. Place end laps above purlin with backup plate and cinch strap so panel end-lap fasteners do not penetrate purlin.

3.4 ERECTION - GUTTER, DOWNSPOUT, FLASHINGS AND TRIM

A. Install gutters and downspouts, flashings and trim in strict accordance with manufacturer's instructions, using proper sheet metal procedures.

B. The downspout to be connected to [storm sewer system.] [ ] by plumbing contractor.

-OR-

B. Install downspouts to utilize splash [pans.] [pads.] [ ] furnished by others.

3.5 ERECTION - TRANSLUCENT PANELS

A. The translucent panels to be installed in accordance with manufacturer's instructions and details.

B. To be coordinated with installation of roofing and wall systems and related flashings and trims.

C. The installation to be made weathertight by referring to details.

3.6 INSTALLATION - ACCESSORIES

[***Specifier Note:*** *If accessories are referenced to another Section, they must be edited in that Section; delete the applicable statements below.*]

A. Install [door frame], [door], [overhead door], [window and glass], [and] [ ] in accordance with manufacturer's instructions.

B. All roof and wall accessories to be installed weathertight.

3.7 TOLERANCES

A. All work shall be performed by experienced workmen in a workmanlike manner to published tolerances.

B. Install Framing in accordance with MBMA Metal Building Systems Manual, Common Industry Practices.