[SPEC NOTE: This document is intended as a guide to develop specifications for products manufactured by BEHLEN Industries LP. It is not be viewed as a complete source of information about our product(s). Please refer to our product literature for additional recommendations. http://behlen.ca/**]**

[SPEC NOTE: This section includes information for a BEHLEN rigid frame building system and includes all primary and secondary structural framing members, accessories and miscellaneous components required for a complete building. Consult BEHLEN for assistance in editing this Section for specific project requirements. Communication with BEHLEN is important to ensure the building is designed to meet the client's needs. Insulated Metal Panels (IMP), Insulation, wall cladding and roofing can be specified here or referenced to the appropriate section. Delete all **SPEC NOTES** and brackets at final edit.**]**

Part 1 General

1.1 SECTION INCLUDES

[SPEC NOTE: Edit to suit scope of work for steel building system.**]**

.1 Structural design of steel building system, primary and secondary framing.

.2 Design of anchor rods for quantity and diameter only.

.3 Design of [metal cladding and roofing] [Insulated metal wall and roof panels].

.4 Preparation of shop drawings.

.5 Supply of steel building system primary and secondary framing.

.6 Supply of [metal cladding and roofing] [Insulated metal wall and roof panels].

.7 Reinforcement and framing required by mechanical penetrations and projections, and doors and windows.

.8 [Gutters and downspouts].

.9 Drawings for the steel building system signed and sealed by a professional engineer registered or licenced in [Province] [Territory], Canada.

1.2 RELATED REQUIREMENTS

[SPEC NOTE: Only include those sections below that are actually included in the body of this section but specified elsewhere in the manual. Edit and list additional items from "Checklist of Items" in CSSBI 30M-17, Standard for Steel Building Systems.**]**

.1 Section 01 33 00 - Submittal Procedures

.2 Section 01 21 00 - Allowances

.3 Section 03 [___] - Supply and setting of anchor rods

.4 Section 03 [___] - Concrete foundations, Grade Beams, Floor Slabs

.5 Section 05 12 23 - Structural Steel

.6 Section 07 [___] – Insulation

.7 Section 07 92 00 - Sealants

.8 Section 08 [___] - Doors

.9 Section 08 50 00 - Windows

.10 Section 08 71 00 - Door hardware

1.3 REFERENCE STANDARDS

[SPEC NOTE: Edit to suit standards specified in project specifications. Delete standards not included in the final edit of this Section.**]**

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

.1 ASTM A36/A36M-19, Standard Specification for Carbon Structural Steel

.2 ASTM A53/A53M-20, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless

.3 ASTM A307-21, Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength

.4 ASTM A475-03(2020), Standard Specification for Zinc-Coated Steel Wire Strand

.5 ASTM A500/A500M-21a, Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes

.6 ASTM A529/A529M-19, Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality

.7 ASTM A572/A572M-21e1, Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel

.8 ASTM A653/A653M-19a, Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

.9 ASTM A792/A792M-10(2015), Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process

.10 ASTM A992/A992M-20, Standard Specification for Structural Steel Shapes

.11 ASTM A1011/A1011M-18a, Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Allow with Improved Formability, and Ultra-High Strength

.12 ASTM F1554-20, Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

.13 ASTM F3125/F3125M-19e2, Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 Mpa and 1040 Mpa Minimum Tensile Strength

.2 Canadian Standards Association (CSA):

.1 CSA S16-19, Design of Steel Structures

.2 CSA S136-16, North American Specification for the Design of Cold-Formed Steel Structural Members

.3 CSA A660-10 (R2019), Certification of manufacturers of Steel Building Systems

.4 CSA G40.20-13/G40.21-13(R2018), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel

.5 CSA G164-18, Hot dip galvanizing of irregularly shaped articles

.6 CSA W47.1-19, Certification of Companies for Fusion Welding of Steel

.7 CSA W59-13, Welded Steel Construction (Metal Arc Welding)

.3 Canadian Sheet Steel Building Institute (CSSBI):

.1 CSSBI 30M-17, Standard for Steel Building Systems

.2 CSSBI B15-17, NBCC 2015, Design Load Criteria for Steel Building Systems

.3 CSSBI B15B-17 Serviceability Design Criteria for Low Rise Steel

.4 Building Systems

.5 CSSBI C1-17, Certificate of Design and Manufacturing Conformance with NBCC 2015

.6 CSSBI S8-18, Quality and Performance Specification for Prefinished Sheet Steel Used for Building Products

.7 CSSBI Sheet Steel Facts 03-17, Care and Maintenance of Prefinished Sheet Steel Building Products

.4 Canadian Institute of Steel Construction (CISC)

.1 CISC/CPMA Standard 1-73a A Quick-drying One-Coat Paint for Use on Structural Steel

[**SPEC NOTE:** Delete 1.3.4.2 below if not applicable**]**

.2 [CISC Crane-Supporting Steel Structures: Design Guide, 4th edition 2021]

1.4 SYSTEM DESCRIPTION

.1 Type: [rigid frame] [beam and column] with vertically braced bays as indicated.

.2 Wall System: [through fastened [single skin]] [concealed fastened] [insulated metal panels] [thermal wall system].

.3 Roof System: [standing seam] [through fastened] [single skin] [standing seam insulated metal panels] [thermal roof system].

.4 Roof Slope: [Minimum ____]

1.5 DESIGN

[SPEC NOTE: Design to NBCC or relevant codes, conform to relevant CSSBI standards. Use 1.5.1 for every project. Edit Design Criteria paragraphs to select optional criteria applicable for project conditions.**]**

.1 Standards

.1 Design to conform to [National Building Code of Canada (NBCC) and applicable Provincial and local Codes.]

.2 Design structural steel to CAN/CSA S16.

.3 Design cold formed steel sections to CAN/CAS S136.

.4 Fabricators to be certified by the Canadian Welding Bureau to requirements of CSA W47.1-19, Division 1 or 2.1.

.5 Companies performing field welding to be certified by the Canadian Welding Bureau to requirements of CSA W47.1.

.6 Erect to the CISC Code of Standard Practice.

.7 Building manufacturer to be certified to CAN/CSA A660.

.2 Design Criteria

.1 Main Column spacing to be as indicated on the drawings.

.2 Wind columns on the building ends to be as indicated on the drawings.

.3 The minimum clear internal height of the building to be as indicated on the drawings.

.4 The main building frames to be designed as steel moment-resisting frames. The base of the frames act as pinned. Frames designed by the bare frame method and not use composite stiffness.

.5 Provide [portal frames] [diagonal bracing] perpendicular to the main building frames and in building end walls. Locate bracing in bays designated on the drawings where indicated.

[SPEC NOTE: Coordinate thermal resistance with Division 07 requirements.**]**

.6 Design assembly to thermal resistance:

.1 Wall assembly: Minimum [4.76 RSI (R27) nominal] [_____RSI (___) effective].

.2 Roof assembly: Minimum [6.17 RSI (R35)] nominal] [_____RSI (___) effective].

[SPEC NOTE: Insert expected temperature range for locality for building, including allowance for wall and roof solar heat gain on coloured finishes.**]**

.7 Design building walls and roof to allow for thermal movement of component materials caused by ambient temperature range of [75] degrees C without causing buckling, failure of joint seals, undue stress on fasteners or other detrimental effects.

.8 Ensure total absence of condensation on the interior surfaces under following minimum conditions:

.1 Interior; 22 degrees C, [30] % relative humidity (RH), still air.

.2 Exterior; minus [40] degrees C, [25] km/h wind.

.9 Building to be weather tight.

.10 Provide positive drainage to exterior of condensation occurring within wall construction and water entering at joints.

.11 Design building enclosure elements to accommodate, by means of expansion joints, any movement in the element itself and between elements and building structure caused by structural movements without permanent distortion, damage to infills, racking of joints, breakage of seals, water penetration or glass breakage.

.12 Provide sub-framing for all openings indicated on the plans.

.3 Loading Definitions

.1 Dead loads are to include the self-weight of the structure and all permanent materials of the building construction.

.2 Collateral loads shall include mechanical and electrical equipment, sprinkler systems, suspended ceilings and all other removable parts of the structure.

.3 Live loads are to include superimposed loads on the structure due to the following

.1 Use and occupancy loads.

.2 Snow, rain, and ice effects.

.3 Maintenance and construction loads.

.4 Wind loads.

.5 Earthquake loads.

.6 Thermal loads.

.7 [Crane loads.]

[SPEC NOTE: The following is from CSSBI B-15-17: NBCC 2015 Design Load Criteria for Steel Building Systems: For the purposes of determining the wind, snow and earthquake loading requirements in accordance with NBCC 2015, the building must be assigned an Importance Category based on the intended use and occupancy. These categories are presented in the Table 1-1 (reproduced from NBCC Table 4.1.2.1). Delete table on final edit.**]**

Table 1.1-Importance Factors

Importance Category	Wind, I_w		Snow, I_s	
	ULS	SLS	ULS	SLS
Low	0.8	0.75	0.8	0.9
Normal	1.0	0.75	1.0	0.9
High	1.15	0.75	1.15	0.9
Post-disaster	1.25	0.75	1.25	0.9

Source: Tables 4.1.6.2.-A and 4.1.7.3. NBC 2015

.4 Climatic Data

.1 Snow load

.1 Ground Snow Load S_s = [__] kPa

.2 Rain Load S_r = [__] kPa

.3 ULS Importance Factor I_s = [__]

.4 SLS Importance Factor I_s = [0.9]

.2 Hourly Wind Pressures

.1 1/50-year probability: [__] kPa

.2 Internal Pressure Category [1 (enclosed)] [2 (partially enclosed)] [3 (open)]

.3 ULS Importance Factor I_w = [__]

.4 SLS Importance Factor I_w = [0.75]

.3 Seismic Data

.1 S_a (0.2): [____]

.2 S_a (0.5): [____]

.3 S_a (1.0): [____]

.4 S_a (2.0): [____]

.5 S_a (5.0): [____]

.6 S_a (10.0): [____]

.7 PGA: [____]

.8 PGV: [____]

.9 ULS Importance Factor I_e = [__]

.10 Site Classification for Seismic Site Response: Class [__]

.4 Rain Load (One Day Rain, 1/50 probability): [__] mm.

.5 Rain Load (15 min rain) for downspout design: [__] mm.

.5 Design Loads

.1 Building Importance Category: [Low][Normal][High][Post-disaster]

.2 Snow load to be determined in accordance with [NBCC]. C_b to be [0.8]. Wind exposure factor C_w to be [1.0] [0.75]. Load combinations to be applied in accordance with [NBCC].

.3 Wind load to be in accordance with [NBCC]. Wind exposure factor C_e to be base on open terrain.

.4 Dead load to be the self-weight of the Steel Building System, and all specified permanent loads from supported floors, walls, and roofs.

.5 Collateral gravity load:

.1 Lighting, piping, suspended ceilings, wiring, sprinkler runs, and miscellaneous mechanical loads: [_____] kPa.

.2 Refer to structural, mechanical and architectural drawings for additional requirements.

[SPEC NOTE: Delete Crane loads in entirety if not applicable to project.**]**

.3 [Crane loads:

.1 Type: [top-running] [under-hung] [monorail] [jib].

.2 Crane Service Classification: [Class __].

.3 Capacity: [_____tonnes].

.4 Wheel base: [___m].

.5 Maximum static, vertical wheel load: [_____kN].

.6 Vertical impact factor: [_____].

.7 Lateral factor: [_____%].

.8 Lateral wheel load: [_____kN].

.9 Longitudinal factor: [_____%].

.10 Maximum longitudinal load: [_____kN/side].]

.6 Deflection Limitations

[SPEC NOTE: Confirm deflection limitations based on NBCC or relevant codes. A deflection limit of 1/300 may be required for the proper functioning of cranes or to prevent damage to brittle finishes such as brick or glass. Roof purlins supporting non-brittle finishes to be 1/150 of span. Projects with Insulated Metal Panel Roofs to be 1/240 of span for specified loads. See; CSSBI B15B-17 Serviceability Design Criteria for Low Rise Steel Building Systems.**]**

.1 Building load resisting frames; lateral drift not to exceed [1/60] [1/80] [1/100] [1/300] [_____] of the height measured at the eave, under wind loads [or applicable lateral crane loads].

.2 Roof framing: [1/180] [1/240] of the clear span under full specified roof live load.

.3 Wall Cladding: [1/180] of the clear span under full specified wind effects.

.4 Girts: [1/180] of the clear span under full specified wind effects.

.5 Maintain tolerance for building structure and enclosure elements per CAN/CSA A660 or CAN/CSA S16, whichever is more restrictive.

1.6 SOURCE QUALITY CONTROL

.1 Provide certification that the steel building system manufacturer is certified to CSA A660.

.2 [Provide mill test reports for steel used in rigid frames and other components.]

.3 Provide conformation from steel building system manufacturer that erector is qualified to erect system.

1.7 SHOP DRAWINGS

.1 Submit shop drawings in accordance with Section [01 33 00 Submittal Procedures].

.2 Submit shop drawings bearing stamp and signature of professional engineer registered or licenced in [Province] [Territory], Canada.

.3 Submit the following documents in accordance with CSSBI 30M.

.1 Erection drawings, foundation loads and anchor rod setting plans, part numbers, connection and assembly details.

.4 Indicate plans and grid lines, structural members and connection details, bearing and anchorage details, roof cladding, wall cladding, framed openings, accessories, schedule of materials and finishes, loads and reaction forces, fasteners and field welds, sealant locations and details.

.5 Indicate shop and erection details including cuts, copes, connections, holes, treaded fasteners, rivets and welds. Indicate welds by CSA welding symbols.

.6 Indicate on shop drawings related provisions required for mechanical, electrical, and other work.

1.8 CERTIFICATES

.1 Submit Certificate of Design and Manufacturing Conformance with NBC [2015] stating design criteria used and loads assumed in design. Certificate to be signed and sealed by a professional engineer registered or licenced in [Province] [Territory], Canada.

1.9 STORAGE AND PROTECTION

.1 Protect prefinished steel sheet during fabrication, transportation, site storage and installation in accordance with CSSBI Sheet Steel Facts 03.

.2 Handle and protect metallic coated materials from damage to metallic coating. During storage, space surfaces of metallic coated materials to permit free circulation of air.

.3 Provide protection from weather to all primary and secondary steel components stored on site by means of properly secured tarps. Components should be prevented from prolonged contact with the ground by means of adequately spaced blocking

.4 Store prefinished materials off ground, protected from weather, to prevent twisting, bending, and abrasion, and to provide passive ventilation. Slope metal sheets to ensure drainage.

.5 Protect panels from weathering by removing or venting sheet plastic shipping wrap.

.6 Prevent contact with other materials which will cause discolouration, staining or corrosion.

1.10 WARRANTY

.1 Provide Pre-engineered manufacturer's standard 1-year warranty against manufacturer's defects. Include warranty for repair or replacement of components against failure for one year from date of shipment.

.2 Provide manufacturer's 25-year warranty for plain Galvalume metal roof panels against rupture, structural fail, or perforation from corrosion under normal atmospheric conditions.

[SPEC NOTE: CSSBI S8-2018 - Quality and Performance Specification for Prefinished Sheet Steel Used for Building Products, provides paint qualification tests and weathering per ASTM standards, including 40-year film integrity and 30-year chalk and colour change.]

.3 Provide manufacturers panel finish warranty including degradation of paint finish under normal atmospheric conditions including colour fading caused by exposure to weather.

.1 40-year film integrity and 30-year chalk and colour change in accordance with CSSBI S8.

Part 2 Products

2.1 MATERIALS

.1 Structural steel: to CSA G40.20, 350W (50W) or ASTM A572, 345 MPa (Grade 50), [shop primed] [hot dipped zinc coated to CSA G164 to [_____] g/m2] [unprotected].

.2 Hollow Structural Sections (HSS): CSA G40.20, Grade 350W (50W) [Class C] [Class H] or ASTM A500 [Grade B] [Grade C].

.3 Plate or Bar Stock: CSA G40.20, Grade 350W (50W) or ASTM A529, A572, A1011 345 MPa (Grade 50).

.4 Angles, S Shapes, Standard Channels (C Shapes): CSA G40.20, Grade 300W (44W) or ASTM A529, A572, 300 MPa (Grade 50).

[SPEC NOTE: ASTM F3125 replaces ASTM A325 (120 ksi) and A490 (150 ksi) bolts**]**

.5 Bolts: to ASTM 307 for secondary structural connections, minimum 12mm diameter, complete with nuts and washers, ASTM F3125/F3125M Grade [830 MPa (120 ksi)] [1040 MPa (150 ksi)] for primary structural connections, minimum 19 mm diameter, complete with nuts and washers.

.6 Welding materials: to CSA W59.

.7 Shop primer paint: to CISC/CPMA 1-73a, minimum 25 micrometres (1.0 mils) dry film thickness.

.8 Anchor rods: to ASTM F1554 Grade 248 MPa (36 ksi).

.9 Purlin and girts: high strength ductile steel in conformance with requirements of CSA S136, with minimum yield strength of 380 MPa (55 ksi), Z275 (G90) zinc coated (galvanized) per ASTM A653M.

.10 Rod: to [CSA G40.20/G40.21] [ASTM A992/A992M] [300 MPa (44 ksi)] [340 MPa (50 ksi)] [ASTM A36/A36M 245 MPa (36 ksi)] minimum yield, shop primed.

.11 Cable: to ASTM A475, Extra high strength, Class A hot-dip galvanized coating. Design strength based on manufacturer's published breaking strengths.

.12 Eye bolts: forged, 1030 carbon steel, hot-dip galvanized. Design strengths based on manufacturer's published breaking strengths.

.13 Screws: corrosion resistant, purpose made. Exposed fasteners include metal backed EPDM washer and head colour to match attached panels.

.14 Insulation and tape: [as indicated in Section [07 21 16 – Blanket Insulation]] [as recommended by insulation manufacturer].

.15 Insulation adhesive: Purpose made for insulation type and liner sheet, incombustible after initial set.

.16 Vapour barrier and sealing tape: as recommended by insulation manufacturer.

.17 Sealants: [as indicated in Section [07 92 00 – Joint Sealants]] [as recommended by sealant manufacturer].

2.2 FABRICATION

.1 Fabricate structural members in accordance with shop drawings and to CSA S16. Tolerance not to exceed those specified in CSA S16.

.2 Provide holes for attachment of other work, as indicated on the drawings.

.3 Reinforce openings to maintain design strength.

.4 Structural steel to be new un-used steel free of loose mill scale, rust, dirt, oil, and other deleterious matter.

.5 Shop-fabricate all framing members for bolted field assembly. Cutting, drilling, or welding in the field to be minimized, and when required, clearly indicated on the shop drawings.

.6 All members and sections to be closely fitted and finished true to line.

2.3 COMPONENTS

[SPEC NOTE: Review BEHLEN colour charts for standard stocked colour range for cladding, roofing and Insulated Metal Panels. Custom colours available with sufficient lead time and approval of colour match sample. Contact BEHLEN for speciality paint coating recommendations based on project application and location.**]**

[SPEC NOTE: Edit Wall and Roof System to suit project requirements. If specifying Insulated Metal Panels in this Section, edit specifications below and remove 2.3.1 Wall System and 2.3.3 Roof System.**]**

.1 Wall System

.1 Exterior sheet-wall: factory preformed steel sheet, minimum [0.45] mm base steel thickness, 55% aluminum-zinc alloy coated per ASTM A792M, [pre-finished Perspectra Plus series QC#____] [from manufacturer's standard profile colours.] Include closures, gaskets, caulking, flashing and fasteners to effect weathertight installation. Cut ends of sheets square and clean.

.2 Profile: [as indicated]

.3 Exterior corners-wall: material to match finish of adjacent cladding material, shop cut and brake formed to correct angle.

.4 Accessories to exterior wall cladding: brake or bend to shape, material and finish to match wall cladding, comprising [cap flashings] [drip flashings] [internal corner flashings] [copings and closures for [head] [jamb] [sill] corners].

.5 Sub-girts and clips: factory preformed steel sheet, minimum [1.20]mm base steel thickness, Z275 (G90) zinc coated (galvanized) per ASTM A653M.

.6 [Interior liner: factory preformed steel sheet, minimum [0.45] mm base steel thickness, 55% aluminum-zinc alloy coated per ASTM A792M, [pre-finished Perspectra Plus series QC#____] [plain Galvalume] from manufacturer's standard profile [indicated], with side lap. [Install sealant material where liner sheet is to be used as a vapour barrier]. Cut ends of sheets square and clean.]

.2 Wall System: IMP

.1 Insulated Metal Panels with continuous foamed in-place, closed cell polyisocyanurate insulating core. Offset tongue and groove side joints designed to accept butyl sealant and hidden clips. Cut ends of panels square and clean.

.2 Exterior and interior preformed and prefinished metal sheets Zinc-Coated (Galvanized) Steel Sheet to ASTM A653/A653M, commercial steel (CS), minimum Grade 230, with Z275 coating designation.

.3 Width: 1067mm.

[SPEC NOTE: Leading Edge is only available with 0.76mm exterior steel thickness. Delete all other steel thicknesses if specifying Leading Edge.**]**

.4 Profile: [Horizon MS Mesa Smooth, non-embossed] [Horizon MSLE Mesa Light Embossed] [Leading Edge SM Smooth] [Leading Edge LE Light Embossed] [Leading Edge HE Heavy Embossed]

.5 Exterior Sheet: Minimum [0.46] [0.61] [0.76]mm steel thickness.

.6 Exterior Finish: [PVDF 2-coat solid colour] [PVDF 3-coat metallic colour] QC# [_____] [As selected from manufacturer's standard range].

.7 Interior Liner Sheet: Minimum [0.46] [0.61] [0.76]mm steel thickness, [Mesa profile with a smooth, non embossed steel surface texture] [Mesa profile with a light embossed surface texture].

.8 Interior Finish: PVDF 2-coat solid colour Regal White.

.3 Roof System

.1 Exterior sheet-roof: factory preformed steel sheet, 55% aluminum- zinc alloy coated per ASTM A792M, [pre-finished Perspectra Plus series QC#] [plain Galvalume] [from manufacturer's standard profile colours.] Include closures, gaskets, caulking, flashing and fasteners to effect weathertight installation. Cut ends of sheets square and clean.

.2 Profile: [SSR24 Standing Seam, minimum [0.61] mm base steel thickness, with floating clip system.] [AWR exposed fastened roof panels, minimum [0.45] mm base steel thickness] [Exposed fastened roof panels, minimum [0.45] mm, profile as indicated].

.3 Accessories to roof cladding: brake or bend to shape, material and finish to match roof cladding or wall cladding where applicable, comprising [cap flashings] [drip flashings] [coping and closures for [corners] [fascia] soffit].

.4 Sub-purlins and clips: factory preformed steel sheet, minimum [____] mm base steel thickness, Z275 (G90) zinc coated (galvanized) per ASTM A653M.

.5 [Interior liner-ceiling: factory preformed steel sheet, minimum [0.45] mm base steel thickness, 55% aluminum-zinc alloy coated per ASTM A792M, [pre-finished Perspectra Plus series QC#____] [plain Galvalume] from manufacturer's standard profile [indicated], with side lap. [Install sealant material, where liner sheet is to be used as a vapour barrier]. Cut ends of sheets square and clean.]

.6 Gussets: factory preformed steel sheet, minimum [_____] mm base steel thickness, zinc coated (galvanized) per ASTM A653M, shop cut and formed to profile from manufacturer's standard.

.4 Roof System: IMP Standing Seam

.1 Insulated Metal Panels with continuous foamed in-place, closed cell polyisocyanurate insulating core. Offset tongue and groove side joints designed to accept butyl sealant and hidden roof clips. Mechanically folded 50mm standing seam height. Cut ends of panels square and clean.

.2 Exterior and interior preformed and prefinished metal sheets Zinc-Coated (Galvanized) Steel Sheet to ASTM A653/A653M, commercial steel (CS), minimum Grade 230, with Z275 coating designation.

.3 Width: 1067mm.

.4 Profile: Skyline Mesa Smooth

.5 Exterior Sheet: Minimum 0.61mm core steel thickness, Mesa profile with a smooth, non-embossed steel surface texture.

.6 Exterior Finish: [PVDF 2-coat solid colour] QC# [_____] [As selected from manufacturer's standard range].

.7 Interior Liner Sheet: Minimum [0.46] [0.61]mm core steel thickness, [Mesa profile with a smooth, non embossed steel surface texture] [Mesa profile with a light embossed surface texture].

.8 Interior Finish: PVDF 2-coat solid colour Regal White.

.5 Gutters and Downspouts

.1 Form gutters and downspouts from minimum [0.45] mm base steel thickness, material and finish to match wall cladding material, size and profile with outlets as indicated.

.2 Provide: Support straps and fastening, flute fillers and sealants, Leaf screens and dams for outlets.

[SPEC NOTE: Zinc coating (galvanized) on members is not an architectural finish.**]**

2.4 FINISHES

.1 Clean, prepare surfaces and shop prime structural steel to CISC/CPMA 1-73a [except where members are zinc coated (galvanized) or are to be encased in concrete].

Part 3 Execution

3.1 ERECTION

.1 Do work in accordance with CSSBI 30M, Standard for Steel Building Systems except where specified otherwise.

.2 The erection of metal building system components shall be in accordance with the approved erection drawings issued for construction and applicable revisions. Follow requirements of Occupational Health and Safety Regulations of the governing body, and local codes.

.3 Erect structural frame in accordance with shop drawings and to CSA S16. Erection tolerances not to exceed those specified in CSSBI 30M.

.4 Contractor shall be responsible for the stability of the structure during its erection. Temporary bracing and guys shall be used to maintain structural integrity and to keep the structural members plumb and true during erection.

.5 Structural bolts at connections subject to tension loads to be tightened by turn-of-nut method and bolts are to be marked to indicate completion of procedure.

.6 Prepare structural steel surfaces for field welding by removing coating before welding. After welding, chip away flux and prime with [CGSB 1-GP-178Ma] [CGSB 1.40] [spot primer] for prime painted surfaces. Touch up welded areas with zinc rich primer for galvanized surfaces.

.7 Obtain written permission from steel building manufacturer prior to field cutting or altering of structural members.

.8 Touch up with shop primer [zinc rich primer], bolts, welds and burned or scratched surfaces exposed at completion of erection.

.9 Install [wall cladding] [insulated metal panel] assemblies ensuring a completed weather-tight installation.

.10 [Secure sub-girts to structural wall supports.]

.11 Install [roof] [insulated metal roof panel] assemblies ensuring a completed installation.

.12 Secure [roof cladding sheets] [insulated metal roof panels] to structural [purlins] [beams]. Terminate sheet ends over structural supports.

.13 Secure side laps.

.14 Continuously seal end and side laps.

.15 [Install interior [ceiling] [and] [wall] liner panels to ensure continuous [vapour] [and] [air] [dust proof] barrier.]

.16 Install necessary closures, gaskets, caulking sealants and flashings.

.17 Install insulation and vapour retarder to maintain continuity of thermal and moisture protection to building elements and spaces.

.18 Fit insulation closely around and behind electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.

.19 Keep insulation away from hot surfaces, chimneys and gas vents.

.20 Do not compress insulation to fit into spaces.

.21 For [insulated] [thermal] roof system, apply insulation in ceiling to form continuous thermal barrier.

3.2 Cleaning and Protection

.1 Progress Cleaning: leave work area clean at the end of each day

.1 Remove all metal filings from cutting, drilling or fastening on all surfaces.

.2 Protect installed products and components from damage during construction and installation.

.3 Repair damage to adjacent materials caused by construction and installation of materials.

.4 Remove temporary protective coverings and strippable films, if any, as soon as each panel is installed.

3.3 FIELD QUALITY CONTROL

.1 Inspection and testing of materials and workmanship will be carried out by an Inspection and Testing Company designated by the [Engineer] [Consultant].

.2 The Inspection and Testing Company will carry out vertical and horizontal alignment checks and inspection of representative connection welds.

.3 Contractor will pay costs for inspection and testing per [Section 01 21 00 - Allowances]. Costs for any re-inspection and/or re-testing as a result of deficient work will be paid for by the contractor.

.4 Prior to inspection and testing by the Inspection and Testing Company, the structural steel erection contractor will carry out an inspection of the work and make the inspection results available to the Engineer Consultant and the inspection report will identify the areas or work inspected, deficiencies identified and measures taken to correct the deficiencies.

END OF SECTION