1 General

1.1 The name of Post-frame Building Manufacturer is to be submitted with the bid.

1.2 Post-frame building shall be designed and installed in accordance with the latest edition of the Post-Frame Building Design Manual as published by the National Frame Builder’s Association, applicable local Building Code, ASTM References, and other applicable legal and EPA requirements and be certified by an Engineer registered in the State of Indiana.

1.3 Provide a complete building system of standard mutually dependent components and assemblies that form a Post-frame building capable of withstanding structural, environmental and other loads, 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.

1.4 Letter of Design Certification shall be submitted with the shop drawings. Letter of Design Certification shall include:

1.4.1 Signature of the Designer of Record who shall be a Registered Professional Engineer licensed in the State of Indiana

1.4.2 Building dimensions and elevations

1.4.3 Governing Building Code

1.4.4 Lateral Design procedure used

1.4.5 Design Criteria including dead, live, snow, seismic, collateral, wind, and concentrated loads; load combinations; methods of load application; and load path

2 Design Criteria

2.1 Post-Framed building shall be designed to support self-weight plus superimposed dead load, live load and environmental loads

2.2 A minimum collateral load of 5 PSF shall be applied to the entire structure to account for the weight of additional materials, systems, and/or equipment.

2.2.1 Additional 5 psf load shall be included for projects with a suspended or hard ceiling.

2.2.2 Collateral load shall not be included when considering load combination of (Dead + Wind Uplift)

2.2.3 Additional Collateral load shall be included in the roof design for mechanical rooms, laboratories, corridors, etc. or any other space that may experience hanging loads beyond the normal collateral dead load. Minimum 20 psf or as required by the design intent of the space.

2.3 Additional framing considerations shall be made for anticipated concentrated loads

2.4 The live load deflection of roof elements shall not exceed the following where L is the span of the element considered:

2.4.1 Exposed structure (no ceilings) shall not exceed L/180

2.4.2 Supporting plaster ceilings shall not exceed L/360

2.4.3 Supporting other ceilings shall not exceed L/240

2.5 Lateral deflections, or drift, at the roof level in relation to the slab-on-grade shall be calculated based on a 50-year mean recurrence interval and shall not exceed the following:

2.5.1 H/125 for buildings with exterior metal panel walls,

2.5.2 H/600 for masonry walls with steel stud backup walls

2.6 Maximum deflection for wall and roof panels under full dead and live and/or wind loads shall not exceed L/180.

2.7 Wind-Uplift Resistance: Provide metal roof panel assemblies that comply with UL 580 for Class 60.

2.8 Columns: Column posts shall be attached above grade to

2.8.1 precast concrete pier; pier embedment depth per designer of record

2.8.2 cast-in-place concrete pier; pier embedment depth per designer of record

2.9 Wood Post embedded in soil, gravel or concrete shall not be permitted.

2.10 Frost Wall: If the building is to be thermally controlled, include a continuous perimeter reinforced concrete frost wall which is founded at or below the minimum frost depth prescribed by the building code.

2.11 Minimum slope for a mechanically seamed metal roof shall be 1:12.

2.12 Minimum slope for a manual snap-in
seamed roof shall be 3:12.

2.13 Aluminum roofing and siding shall not be acceptable unless approved by Owner.

2.14 All non-standard flashing and trim details shall be designed and detailed by Architect or Engineer of Record.

3 Wall & Roof Finish

3.1 All exterior metal wall panels and visible roof panels shall have a two-Coat Fluoropolymer AAMA 621 finish containing not less than 70 percent PVDF resin by weight in color coat such as Kynar200 or Hylar5000 finish. A Galvalume finish shall be acceptable on low slope, non-visible roofs.

3.2 Insulation: The Architect of Record shall provide details for additional insulation as required to meet building code. Methods including thermal blocks and proprietary systems shall be reviewed by Owner.