



## GENERAL/DESIGN/STRUCTURE/MATERIALS/PAINTING

### 1. General

- 1.1 Tower shall be prefabricated custom design as manufactured by Panel-Built, Inc., 302 Beasley Street, Blairsville, GA 30512.
- 1.2 Tower shall be free-standing and shall not use existing walls or building columns for vertical support.
- 1.3 Tower shall be capable of being erected, dismantled, and relocated with hand tools.
- 1.4 Bidder shall include the following information with bid package:
  - 1.4.1 Design load in pounds per square floor (psf).
  - 1.4.2 Deflection when live load is applied.
  - 1.4.3 Maximum column load in pounds.
  - 1.4.4 Shipping weight.
  - 1.4.5 Height to top of deck and minimum clear height below Tower.
- 1.5 The manufacturer shall supply drawings by a qualified designer showing location of each component for approval. Elevation views available upon request.
- 1.6 Manufacturer shall offer certification of final drawings by a Professional Engineer licensed in the state in which the installation will occur.

### 2. Design

- 2.1 Specifications:
  - 2.1.1 The structural steel design shall meet or exceed the requirements of the American Institute of Steel Construction (AISC), Manual of Steel Construction-Allowable Stress Design.
  - 2.1.2 Bar joist design shall meet or exceed the requirements of the Steel Joist Institute (SJI) "Standard Specification for Open Web Steel Joists, K-Series.
  - 2.1.3 OSHA (Occupational Safety & Health Administration) regulations shall be met or exceeded in the design.
  -



- 2.1.4 Any other codes specified by the customer, such as Building Official's Code of America (BOCA), Uniform Building Code (UBC), or International Building Code (IBC), shall be met by the manufacturer.
- 2.2 Loads and Deflections:
  - 2.2.1 Design shall meet the customer's requirement for live load.
  - 2.2.2 Structure shall be designed to withstand horizontal forces as required for the seismic zone at the site of installation.
  - 2.2.3 Stairs and landings shall be designed for a live load of 100 psf.
  - 2.2.4 Deflection of all components under full live load shall not exceed 1/240 of span.
  - 2.2.5 Special requirements for concentrated loads shall be met by the manufacturer as specified by the customer.

### 3. Structure:

- 3.1 Railings
  - 3.1.1 Railing shall be a minimum of 1-1/2" X 11 ga. square tube.
  - 3.1.2 Kick plate shall be a minimum of 4" high X 14 ga. steel.
  - 3.1.3 Standard handrail designs include OSHA, IBC Factory Use Group, IBC Mercantile Use Group, and BOCA.
- 3.2 Columns
  - 3.2.1 Towers shall be designed so that column spacing shall meet field conditions and requirements of customers.
  - 3.2.2 Column size shall be a standard of 5" X 5" X 3/16" tubular steel.
  - 3.2.3 Base plates shall be a standard of 12" X 12" X 5/8" and anchored with a minimum of four (4) 1/2" diameter anchor bolts.
- 3.3 Structural Steel, Support Members and Bar Joists
  - 3.3.1 All field connections shall be bolted.
- 3.4 Stairs
  - 3.4.1 Stairs shall be of a bolt together construction



- 3.4.2 Standard designs include OSHA, IBC Factory Use Group, IBC Mercantile Use Group, and BOCA

#### 4. Materials:

- 4.1 Structural steel beams shall be hot rolled wide flange and meet the requirements of ASTM Specification A36 “Standard Specification for Structural Steel” (minimum yield strength of 36,000 pounds per square inch: FY = 36 KSI).
- 4.2 Bar Joists shall meet the requirements of the Steel Joist Institute.
- 4.3 Columns shall be square tube and shall meet the requirements of ASTM Specification A500B titled “Cold Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes” (minimum yield strength of 46,000 psi: FY = 46 KSI).
- 4.4 Decks shall be constructed in one of the following designs:
  - 4.4.1 Plywood – 3/4” tongue and groove or Advantech attached to B-Deck with a minimum of 40 screws per 4’ X 8’ sheet.
  - 4.4.2 Bar Grating – Shall be a minimum of welded steel with openings 4” X 1 3/16” and 1” X 1/8” bearing bars, attached to the structure with saddle anchors set over bearing bars with tek screws and painted black.
  - 4.4.3 Steel Plate – Shall be a minimum of 1/8” thick, plain or diamond plate meeting ASTM A36 and attached over B-Deck with a minimum of 20 mechanical fasteners per 32 square feet area.
  - 4.4.4 Other decking options available as requested by customer.
- 4.5 Deck Underlayment for plywood or steel plate shall be a minimum of 22 ga. corrugated steel B-Deck with 1-1/2” high corrugations, spaced 6” center to center, and attached to the structure with minimum of one screw per linear foot of panel width and one crew per linear foot on overlapping panel edges for each structural member crossed.
- 4.6 All Structural Bolts shall be J429 Grade 5 Bolts.

#### 5. Painting

- 5.1 All structural beams, columns, landings, handrail and gates are powder coated our standard colors. Bar joists are primed gray and are not powder coated. Special colors and powder coating the bar joists can be coated upon request. All handrails shall be painted safety yellow. General Considerations: Condition of existing Floor Loading requirements Use of Tower Clear height of area Are there any existing obstructions



## **ACCEPTABLE MANUFACTURERS**

### **1.1 MANUFACTURERS**

- A. Acceptable Manufacturer: Panel Built, Inc., 906 Beasley Street, Blairsville, GA 30512  
  
Toll Free Tel: 800-636-3873, Fax: 800-594-3245,  
  
Email: [salesgroup@panelbuilt.com](mailto:salesgroup@panelbuilt.com), Web: <http://www.panelbuilt.com>
  
- B. Modular system(s) by manufacturers other than those pre-approved shall submit sufficient product data for review prior to granting approved status. As a minimum: Design drawings and / or engineering calculations, applicable code compliance, product catalog(s) and samples of wall panel construction.