**6. ENGINEERING SYSTEMS REQUIREMENTS**

**B10 SUPERSTRUCTURE**

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SYSTEMS REQUIREMENTS  
SUPERSTRUCTURE TEMPLATE 09/22  
  
Instructions for using this template: There are template files for each UNIFORMAT Level 2 Group Elements. This template is for Group Element B10-SUPERSTRUCTURE. Text such as this is hidden text that will not print when the hidden text box in "Print/Options" is un-checked.  
  
The Structural Team Member must edit this template for the requirements of the project and wherever brackets [ ] appear. The Designer must use UFC 3-301-01 when determining project requirements.  
  
The SYSTEMS REQUIREMENTS are intended to define items that are required throughout the facility. Room-specific requirements are defined in the Part 3 Chapter 5 ROOM REQUIREMENTS section. Coordinate with the lead programmer for ROOM REQUIREMENTS. Delete all elements that are not required for the project. If additional elements or sub-elements are required for the project that do not appear in the template, refer to the NIST UNIFORMAT II publication for additional building element numbers and descriptions. The Uniformat II Work Breakdown Structure can be found at** [**www.wbdg.org/ndbm/**](http://www.wbdg.org/ndbm/) **. Coordinate with the PERFORMANCE TECHNICAL SPECIFICATION SECTION B10 (Section B10) to ensure that performance requirements are provided for all of the Building Elements listed here and that paragraph numbering matches.  
  
There may be rare occasions when prescriptive specifications may either be edited and included in Part 5 of the RFP or required in Section B10 to be edited by the Contractor's Designer of Record. In both cases, the Engineering Systems Requirements (ESR) must include references to these documents.  
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NOTE: Consider each superstructure system component relative to UFGS Section 01 33 29, *Sustainability Requirements and Reporting*and UFC 01-200-02, *High Performance and Sustainable Building Requirements*.  
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**SYSTEM DESCRIPTION**  
Provide the building framing system in accordance with UFC 3-301-01, *Structural Engineering* and UFC 4-211-01N, *Aircraft Maintenance Hangars*. Refer to UFC 3-301-01 and UFC 4-211-01N for structural load requirements.

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NOTE: Provide information for special live loads, concentrated loads, and extraordinary events (e.g., terrorism threats, accidental blast). Normally, special loads and extraordinary events are not required and the following paragraphs will be deleted, since typical design live loads are specified in UFC 3-301-01, *Structural Engineering*.  
  
In most instances the load criteria defined in UFC 3-301-01, *Structural Engineering* and UFC 4-211-01N, *Aircraft Maintenance Hangars* are sufficient without further elaboration. Unless there are unusual circumstances, the RFP preparer can delete the following paragraphs.  
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[In addition, design the structure in accordance with the following loading criteria:

[Live Loads

[Provide for live loads for occupancies or uses not provided in UFC 3-310-01 as follows:

Occupancy or Use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Uniform Live load: \_\_\_\_\_\_\_\_\_\_\_\_ psf.]

[Concentrated Live Load: \_\_\_\_\_\_\_\_\_\_\_\_\_\_lbs.]

[Provide for live loads that differ from the minimum live loads provided in UFC 3-310-01 as follows:

Occupancy or Use: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Uniform Live load: \_\_\_\_\_\_\_\_\_\_\_\_ psf.]

[Concentrated Live Load: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_lbs.]

][Extraordinary Events

Design the structure to withstand the effects of the following extraordinary (i.e. low probability event: [\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_].

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NOTE: Define the Wind Exposure and Seismic Design Category in the RFP, since they are subjective. The basic wind speed, seismic spectral accelerations and other environmental load data should only be provided where the criteria for the project location is not listed in UFC 3-301-01, Structural Engineering. Hangars are normally classified in Risk Category II, However, if the aircraft being housed have a specific disaster recovery function or will be used as an emergency shelter, specify Risk Category IV.  
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][Importance Factors

Use Risk Category [II] [IV] in Table 2-2 of UFC 3-301-01, *Structural Engineering,* for determining Importance Factors for seismic, snow, and wind design.

][Seismic Design Category

The Seismic Design Category is [A] [B] [C] [D].]

][Wind Exposure

Base wind design on Exposure [A] [B] [C] [D] [E] [F].]

**B1010 FLOOR CONSTRUCTION**

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NOTE: Edit the following paragraph to include or exclude specific floor constructions as appropriate, or to permit any floor structural framing system.  
  
Catwalks are required to provide maintenance support to overhead bridge cranes and vertical lift fabric doors. Delete the paragraph concerning catwalks if the project has neither of the items.  
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The floor construction [may] include[s] [a pre-engineered metal building system.] [non-composite concrete slabs on form deck on steel joists] [non-composite concrete slabs on form deck on steel beams], [composite concrete slabs on composite steel deck], [cast-in-place concrete slabs on removable forms], [precast concrete slabs] or [autoclaved aerated concrete].

The floor deck shall be supported on [cast-in place concrete walls], [pre-cast concrete walls], [concrete masonry walls], [steel columns[ and steel beams]], [steel columns and joist girders] or [concrete columns[ and concrete beams]].

[Catwalk construction shall be open [galvanized][painted] serrated steel bearing bar grating supported on structural framing meeting the requirements floor construction support above.]

**B1020 ROOF CONSTRUCTION**

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NOTE: Edit the following paragraph to include or exclude specific roof constructions as appropriate, or to permit any roof structural framing system.  
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The roof construction [may] include[s] [a pre-engineered metal building system.] [steel roof deck on steel joists] [steel roof deck on steel beams] [non-composite concrete slabs on form deck on steel joists] [non-composite concrete slabs on form deck on steel beams], [composite concrete slabs on composite steel deck], [cast-in-place concrete slabs on removable forms], or [precast concrete slabs].

The roof deck must be supported on [cast-in place concrete walls], [pre-cast concrete walls], [concrete masonry walls], [steel columns and steel beams], [steel columns and joist girders] or [concrete columns[ and concrete beams]].

--End of Section--