**6. ENGINEERING SYSTEMS REQUIREMENTS**

**F10 SPECIAL CONSTRUCTION**

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SYSTEMS REQUIREMENTS  
SPECIAL CONSTRUCTION TEMPLATE 02/18  
  
Instructions for using this template: There are template files for each UNIFORMAT Level 2 Group Elements. This template is for Group Element F10-SPECIAL CONSTRUCTION. Text such as this is hidden text that will not print when the hidden text box in "Print/Options" is un-checked.  
   
The Architectural or Structural Member must edit this template for the requirements of the project. The SYSTEMS REQUIREMENTS are intended to define items that are required throughout the facility or on a system wide basis that is common to several rooms. Room-specific requirements are defined in the Part 3 Chapter 5 ROOM REQUIREMENTS section. Coordinate with the lead programmer for ROOM REQUIREMENTS. Editing is required where brackets [ ] appear. Delete all building 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 F10 to ensure that performance requirements are provided for all of the Building Elements listed here and that paragraph numbering matches.  
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NOTE: Edit the following paragraphs to suit the project, or create your own, to describe the SPECIAL CONSTRUCTION for the project. Special construction that is typically included in a construction contract includes pre-engineered metal buildings, cold storage rooms and buildings, sound conditioned rooms, shelters and booths, bullet-resistant protection, radiation protection, grandstands and bleachers, swimming pools, and other special structures typically specified in Division 13 of CSI Masterformat. Coordinate this section carefully with other portions of the RFP.  
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**SYSTEM DESCRIPTION**  
Special Construction includes [special structures such as pre-engineered buildings] and [integrated construction such as cold storage rooms] and [special construction systems such as bullet-resistant pass windows] and [special facilities such as swimming pools] and [sensitive compartmented information facilities (SCIF)].

**GENERAL SYSTEMS REQUIREMENTS**  
 **F1010 SPECIAL STRUCTURES**

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NOTE: Consider one of the following paragraphs for facilities that will include a pre-engineered metal building.   
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**F101001 METAL BUILDING SYSTEMS (PRE-ENGINEERED)**

Provide the building foundation and other systems in accordance with Unified Facilities Criteria (UFC) 3-301-01, *Structural Engineering*.

[Provide a pre-engineered metal building for [\_\_\_\_\_\_\_\_\_]. Refer to UFC 3-101-01, *Architecture* for thermal resistance requirements for building enclosure.

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NOTE: Determine the open-space requirements and column spacing for the facility. Consider the programmed size, height, and the budget restraints. Determine requirements for cranes or other loads suspended from the structure. Determine the size and types of door and window openings into the building. Based on those considerations, determine the most viable system for framing the building. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

[The building must be [\_\_\_] feet (meters) long by [\_\_\_] feet (meters) wide, with an eave height of [\_\_\_] feet (meters) high. The bay spacing must be [\_\_\_\_] [to accommodate] [\_\_\_\_\_\_\_].]

[The framing system for the steel structure must be in accordance American Institute of Steel Construction (AISC) 325 and the Metal Building Manufacturers Association (MBMA) Metal Building Systems Manual, except that end frames may be of rigid frame or beam and column design.]

[See ESR D10 for the Weight Handling Equipment and load requirements for the structure to accommodate.]

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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 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 3-301-01as follows:

Occupancy: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Live load \_\_\_\_\_\_\_\_\_\_\_\_ psf.]

[Provide a live load of [\_\_] psf for [\_\_\_\_\_\_\_\_\_] occupancy [or use] instead of the live load indicated by UFC 3-301-01.]]

[Concentrated Loads

Provide concentrated loads to be incorporated into the design as follows:

Location: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Concentrated 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: Delete the following paragraphs if this information will be provided in Section B10, *Superstructure*. Provide wind exposure information if the contractor cannot be expected to be able to obtain this information from other sources.  
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[Importance Factors

Use Risk Category IV for Fire Stations, which are considered "essential facilities" as listed in Table 1 of UFC 3-301-01, *Structural Engineering*, Structural Load Data in determining Importance Factors for seismic, snow, and wind design.

[Wind Exposure

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

[[Provide framed openings for [number] [overhead] [upward coiling] [other] door[s]. Integrate door openings with the wind bracing system for the building.]

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NOTE: Include the following paragraph for facilities that will have the Agent Storage room separate from the main facility as noted in the Room Requirements and UFC 4-730-10 Space Design Criteria - Agent Storage.  
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**[F101002 EXTERIOR UTILITY BUILDINGS]**

--End of Section--