**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 with 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*.
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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 3-301-01, *Structural Engineering*as 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, *Structural Engineering*.]]

[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 and Importance Factor 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 [I] [II] [III] [IV] [V] in Table 2-2 of UFC 3-301-01, *Structural Engineering* for 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.]

 **F1020 INTEGRATED CONSTRUCTION**

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NOTE: Consider the following paragraph for facilities that will include special purpose rooms such as cold storage rooms or sound control rooms. Provide as detailed a list as can be obtained from the using activity. This information could also be included in the Room Requirements.
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 **F102001 SPECIAL PURPOSE ROOMS**

[The facility includes [[a] prefabricated cold storage room[s] with a room temperature of [\_\_\_degrees F]] [sound conditioned rooms to achieve a sound rating of [\_\_\_\_]].

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NOTE: Consider the following paragraph for facilities that will include special construction systems. Provide as detailed a list as can be obtained from the using activity. This information could also be included in the Room Requirements.
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 **F1030 SPECIAL CONSTRUCTION SYSTEMS**

[The facility includes [\_\_\_\_\_\_\_\_\_\_ [s] to meet the requirements of [\_\_\_\_\_].

 **F1040 SPECIAL FACILITIES**

 **F104001 INTERIOR SWIMMING POOLS**

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NOTE: Use the following paragraph when a swimming pool is included in the project. This information could also be included in the Room Requirements.
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[Provide a [\_\_\_\_\_\_\_] feet (meters) by [\_\_\_\_\_\_\_] feet (meters) swimming pool. The pool must be [\_\_\_\_\_\_] feet (meters) deep. The pool must be equipped with the following features: [\_\_\_\_\_\_].

 **F104002 SENSITIVE COMPARTMENTED INFORMATION FACILITIES (SCIF)**

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NOTE: Use the following paragraph when a SCIF is included in the project. This information could also be included in the Room Requirements.
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[Provide a Sensitive Compartmented Information Facility (SCIF) in accordance with UFC 4-010-05, *Sensitive Compartmented Information Facilities Planning, Design and Construction.*]

--End of Section--