

SECTION B1000**SUPERSTRUCTURE SYSTEMS****06/02****PART 1 - GENERAL****1.1 SYSTEM DESCRIPTION**

The superstructure includes the above grade structural elements required for support of floor and roof construction.

1.2 SYSTEM REQUIREMENT

a. The structure shall be economical, durable, sustainable, and erected on a new building foundation.

1.3 CRITERIA

a. The design and construction of Superstructure Systems for the Facility shall incorporate universally accepted construction procedures developed through sound and prudent engineering judgment, using structural steel, reinforced concrete block masonry, reinforced concrete, Precast/Prestressed Concrete, Post Tensioned Concrete and/or Structural steel stud framing. Heavy Timber and/or wood framing are not acceptable unless specifically called for in the RFP. Pre-engineered metal buildings are not acceptable unless specifically called for in the RFP.

The Superstructure Systems for the Facility shall also be designed and constructed in accordance with the Southwest Division "Technical Guidance for Superstructure System Design and Construction, which may be viewed at the following website:

[SWDIV Superstructure Systems Technical Guide](#)

b. The specified design codes shall be compared to local building codes and the more conservative requirements shall be used.

[c. Use the following Uniformly Distributed Floor Live Loads:

Offices, Classrooms.....	2.87 kPa (60 psf)
Lobbies, Assembly, Stairs.....	4.79 kPa (100 psf)
Mechanical, Armory.....	5.99 kPa (125 psf)
Storehouse.....	28.73 kPa (600 psf)
Shops on 1 st Floor.....	11.97 kPa (250 psf)

NOTE: An additional allowance of 0.96 kPa (20 psf) for partitions shall be provided for floor areas designed for live loads of less than 4.79 kPa. (100 psf).]

PART 2 SUPERSTRUCTURE SYSTEM COMPONENTS**2.1 FLOOR CONSTRUCTION (B1010)****2.1.1 Floor Structural Frame**

Structural elements required for support of floor construction may include columns, girders, beams, trusses, and/or joists. The various structural elements may consist of cast-in-place concrete, precast concrete, unit masonry, [and] structural steel frame systems [, or pre-engineered metal building systems].

[Timber structural materials will not be permitted.]

2.1.2 Structural Walls Supporting Floors

Structural walls supporting floors may include structural steel frames, cold formed structural members (structural steel studs), cast-in-place concrete, precast concrete, or concrete masonry units may be used for walls providing support for upper floors [and mezzanine areas].

[Timber structural materials will not be permitted.]

2.1.3 Floor Construction Firestopping

Firestopping material shall be installed in cavities, around pipe penetrations, and in all other openings in floors to prevent spread of fire and smoke.

2.2 ROOF CONSTRUCTION (B1020)**2.2.1 Roof Structural Frame**

Structural elements required for support of roof construction may include columns, girders, beams, trusses, joists, cast-in-place concrete, precast concrete, and unit masonry systems. The roof slope shall be in the structure. Slope may be provided by a galvanized steel [or timber] truss system.

[Timber structural materials will not be permitted.]

2.2.2 Structural Walls Supporting Roofs

Structural walls supporting roof construction may include structural steel frames, cold formed structural members (structural steel studs), cast-in-place concrete, precast concrete, or concrete masonry units may be used for walls providing support for the roof system.

[Timber structural materials will not be permitted.]

2.2.3 Roof Decks, Slabs, And Sheathing

The system shall be complete with expansion control including sleeved penetrations for services. Design-Build Contractor and his Architect/Engineer of Record shall demonstrate method and frequency of attachment to structural framework.

2.2.4 Canopies

Canopies may be pre-manufactured or constructed with concrete, precast concrete, or steel and metal decking.

2.2.5 Roof Construction Firestopping

Provide firestopping material installed in cavities, around pipe penetrations, and in other openings in roof construction to prevent spread of fire and smoke.

[2.3 ANTITERRORISM/FORCE PROTECTION CONSTRUCTION

2.3.1 Frame Support System

For inhabited structures of three stories or more, use a moment resisting frame support system and design in structural redundancy that allows the loss of one primary vertical or one primary lateral load-carrying element without progressive collapse.

2.3.2 Vertical Load Carrying Elements

For all multistory inhabited structures, design all multistory vertical load carrying elements assuming loss of lateral support at any one-floor level (i.e., a laterally unsupported length equal to two stories).

2.3.3 Exterior Masonry Walls

Exterior masonry walls will be reinforced in all inhabited structures. In locations that are subject to high seismic stresses, exterior walls may be sufficiently reinforced to satisfy antiterrorism/Force Protection requirements. However, the Design-Build Contractor shall demonstrate that the level of reinforcing does in fact satisfy AT/FP requirements, based upon site separation of threat level conditions for the facility being designed and constructed under this RFP.

2.3.4 Floor Slab Reinforcement

On multistory inhabited structures, run concrete floor slab reinforcement continuously through both faces of the slab and into the beams and columns to improve capability to withstand load reversals.

2.3.5 Exterior Wall Elements

Exterior walls in inhabited structures will employ one-way wall elements spanning vertically to minimize blast loads on columns.

2.3.6 Structural Separation

Structurally separate portions of inhabited structures with lesser occupancies from the inhabited portions of the structure when portions with lesser occupancies are located within prescribed standoff distances.]

PART 3

Not Used.

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