**6. ENGINEERING SYSTEMS REQUIREMENTS**

**D10 CONVEYING**

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SYSTEMS REQUIREMENTS  
CONVEYING 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 D10-CONVEYING. Text such as this is hidden text that will not print when the hidden text box in "Print/Options" is un-checked.  
   
The Architectural and/or Mechanical Team 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 D10 to ensure that performance requirements are provided for all of the Building Elements listed here and that paragraph numbering matches.  
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**SYSTEM DESCRIPTION**  
Conveying System(s) include elevators[, lifts] [, escalators] [, moving walks] [and] [, other conveying systems] [, weight handling equipment].

**D1010 ELEVATORS AND LIFTS**

Design assembly and arrangement of elevator, accessories, and supporting systems in accordance with American Society of Mechanical Engineers (ASME) A17.1 and UFC 3-490-06. Provide all materials and equipment, including but not limited to elevator cab and hoist equipment, operating and signal fixtures, doors, door and car frames, car enclosure, controllers, motors, guide rails, brackets, and testing.

**D101001 GENERAL CONSTRUCTION ITEMS**

Provide a traffic analysis.

**D101002 PASSENGER ELEVATORS**

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NOTE: Describe here the number of elevators if more than one elevator is required. Provide description of required elevator locations. Passengers elevator can carry furniture/ equipment/ freight but freight elevators can not carry passengers.  
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Provide a minimum of [one] [\_\_\_\_] [passenger elevator(s)] [passenger elevator(s) designed to carry furniture/ equipment items]. Locate elevator(s) in [ Lobby area] [\_\_\_\_], within visual control of the [reception desk] [\_\_\_\_].

Provide a minimum of one elevator sized to comply with the International Building Code (IBC) medical stretcher requirement and also designed to vertically transport the largest movable equipment or furniture used on the project. [Design the elevator to [carry [\_\_\_\_] as a special load ] [and] [allow entrance and conveying of the following equipment items;[\_\_\_\_].]

Derive finishes and fixtures from Manufacturer's selections. Coordinate finishes with the interior architectural design, and meet the User's needs and functions. [Utilize stainless steel wall panels and hard finish ceiling.] Coordinate the design of the elevator machine room with applicable codes and the elevator manufacturer's requirements.

Provide hydraulic elevators for elevator travel distances of 44 feet (13.41 meters) or less and electric traction elevators for travel distances greater than 44 feet (13.41 meters). Provide minimum hydraulic elevator car speed of 125 feet per minute (38.1 meters/ minute) for elevator travel distances of 15 feet (4.5 meters) or less and 150 feet/minute (45.7 meters/ minute) for hydraulic elevator travel distances greater than 15 feet (4.5 meters). Provide minimum electric traction elevator car speed of 350 feet per minute (106.6 meters/ minute).

**D1020 WEIGHT HANDLING EQUIPMENT**

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NOTE: If cranes are required for the project the Structural Engineer is responsible for the requirements for cranes.  
  
NOTE: This ESR Section covers Passenger Elevators, Freight Elevators, and other Vertical Transportation Equipment (VTE), Moving Walks, and Weight Handling Equipment. Forward procurement, replacement, or overhaul of all cranes that meet the following requirements or are used for the following purposes to Navy Crane Center (NCC), Naval Facilities Engineering Command, Building 491, Norfolk Naval Shipyard, Portsmouth, Virginia 23709-5000. (See NAVCRANECENINST 11450.2).  
  
a. Cranes requiring a rated capacity of 20,000 pounds or greater,  
  
b. Cranes handling molten metals or ordnance,  
  
c. Cranes for special purpose service associated with servicing of nuclear reactors and related components,  
  
d. Cranes for "Hazardous Area Applications" as defined by National Electric Code,  
  
e. Cranes providing precision handling operations requiring complex or synchronized lifting,  
  
f. When requested by foreign countries under the Military Assistance Program or by other DOD agencies when specifically authorized.  
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NOTE: Edit this ESR to designate the WHE desired, i.e., a overhead electric bridge with electric hoist or a monorail with manual chain hoist. If one type of equipment or other is desired from an operational or maintainability perspective, it needs to be stated and all reference to alternative equipment eliminated from ESR to prevent confusion.  
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NOTE: Specify crane configuration based on building configuration and end user requirements. Monorail systems are preferred with lifts that are performed along a single line. Jib cranes are preferred with lifting is isolated to a small area. Underrunning single girder bridge cranes are preferred when any single runway span is less than 40 feet (multiple runways with multiple spans can be used to extend single girder underrunning cranes to any length), and crane hanger loads are accounted for in roof truss design. Single girder top running cranes are preferred when the runway span is less than 40 feet, and an elevated runway is part of the building design. Top running double girder cranes are preferred when the runway span is greater than 40 feet. Elevated crane rails are required to be included in the building design for top running cranes.  
  
Specify crane capacity based on the heaviest identified end user lift. For jib cranes and monorails, the crane capacity must be at least 100% of the heaviest lift including rigging gear. For bridge cranes, the crane capacity must be at least 125% of the heaviest lift (80% rule) including rigging gear.  
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NOTE: This PTS Specification covers the design and construction of facility bridge cranes, girder cranes, and monorails. Other types of cranes such as jib cranes require a prescriptive UFGS specification to be written and placed in RFP Part 5 as a programmatic requirement. Refer to the Whole Building Design Guide, UFGS website or contact the Naval Facilities Engineering Command, Navy Crane Center, to obtain other types of UFGS crane specification templates.  
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Ensure that the crane satisfies the testing and certification requirements detailed in Part 4 of this RFP to the satisfaction of the user activity designated weight handling certifying official. Coordinate witness testing with the user activity designated weight handling certifying official.

[Refer to RFP Part 5 for crane or monorail requirements.]

**D102001 OVERHEAD CRANES**

[Provide a [\_\_\_\_]-ton rated capacity, [electric powered][pneumatic powered][manual] overhead [top-running multiple girder bridge, top running trolley/hoist] [single girder top running bridge, underhung trolley/hoist][single girder underrunning bridge, underrrunning trolley/hoist] crane in [\_\_\_\_]. The clear hook height must not be less than [\_\_\_\_] m ([\_\_\_\_] ft.) above the finished floor.] Provide hook envelope that extends [near enough to the wall to facilitate the Users requirement to load and unload materials] [, within [\_\_\_\_] m([\_\_\_\_]ft.) of the wall]. The crane span must be [\_\_\_\_]m ([\_\_\_\_] ft). The runway length is [\_\_\_\_]m ([\_\_\_\_] ft).

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NOTE: Choose and edit the following paragraph if a very fast or very slow hoist and trolley speed is required. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

[The intended use of the crane requires special hoist and trolley speeds. Provide [\_\_\_\_].]

[Provide [an electrification system for the crane from a wall mounted, fused, disconnect to the crane][a pneumatic distribution system from a wall mounted connection point to the crane].]

Provide runway girders for underruning bridge cranes. Runway rails for top running cranes and necessary foundations are to be provided by the facility Contractor.

**D102002 MONORAIL SYSTEMS**

[Provide a [\_\_\_\_]-ton rated capacity monorail with a [\_\_\_\_]-ton rated capacity [manual] [pneumatic powered] [electric powered] hoist/trolley with a located in the [\_\_\_\_].] The clear hook height must not be less than [\_\_\_\_] ft. ([\_\_\_\_] m.) above the finished floor.] Provide hook envelope that extends[ near enough to the wall to facilitate the User's requirement to load and unload materials] [with-in [\_\_\_\_] m ([\_\_\_\_] ft.) of the wall].

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NOTE: Choose and edit the following paragraph if a very fast or very slow hoist and trolley speed is required. \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

[The intended use of the crane requires special hoist and trolley speeds. Provide [\_\_\_\_].]

[Provide [an electrification system for the crane from a wall mounted, fused, disconnect to the crane] [a pneumatic distribution system from a wall mounted connection point to the crane].]