

February 1, 2014

DEPARTMENT OF VETERANS AFFAIRS

DESIGN INSTRUCTIONS TO ARCHITECTS AND ENGINEERS

LOCATION: VAMC

PROJECT TITLE :

PROJECT NO. :

SCHEMATICS

DESIGN  
DEVELOPMENT

CONSTRUCTION  
DOCUMENTS

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**STRUCTURAL**

STRUCTURAL DESIGN MANUAL FOR ENERGY CENTER PROJECTS  
(February 1, 2014)

FROM:

DATE:

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Telephone Number:

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**STRUCTURAL DESIGN MANUAL  
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DEPARTMENT OF VETERANS AFFAIRS**

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1. **CRITERIA UNIQUE TO VA:** All new facilities and new additions to existing facilities shall be designed in accordance with VA Handbook H-18-8, "VA Seismic Design Requirements for VA Hospital Facilities".
2. **GENERAL:**
  - 2.1 Structural design shall comply with the latest editions of the following:
    - A. Reinforced concrete design - ACI Standard 318, "Building Code Requirements for Reinforced Concrete", American Concrete Institute, Latest Edition.
    - B. Structural steel design - "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings", American Institute of Steel Construction, AISC, Latest Edition.
    - C. Unless otherwise noted above - "International Building Code", IBC, Latest Edition.
    - D. Significant variations from the above in local building codes shall be brought to the attention of the Director, Area Project Office, for approved substitution prior to their use in the structural design.
  - 2.2 Where applicable, verify the load-bearing capability of the existing structural elements to support the new design loads.
  - 2.3 Where alterations are made to the structural elements in existing buildings, these elements individually and the buildings as units, must maintain adequate strength to safely resist both gravity and lateral loads. Any resulting deficiencies must be reinforced accordingly.
  - 2.4 Follow VA Construction Procedures 1 and Fire Protection Design Manual for fireproofing requirements of structural elements.

**3. STRUCTURAL DESIGN LOAD REQUIREMENTS:**

3.1 Minimum uniform basic design live loads shall conform to the International Building Code (IBC) requirements, except as shown in Table 1.

3.2 Provision shall be made in designing floors for a concentrated load of 2000 lb, placed upon any space 2.5 square, wherever this load upon an otherwise unloaded floor would produce stresses greater than those caused by the uniform load required therefore.

3.3 In order to provide a flexible design allowing certain range of occupancy changes in the future, generalized live load categories should be applied to large areas preferably one category to any one floor.

3.4 Roof live loads shall be based on geographical location and local governing building code requirements; however, they shall not be less than 20 psf.

**4. TABLE 1 - MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS\*:**

OCCUPANCY OR USE	LIVE LOADS (psf)
Catwalks/Service Platforms	40
Machine Room	150**

**Footnotes:**

\* Areas supporting heavy equipment shall be designed for the actual operating weight of such equipment.

\*\* Design Live Loads shall be noted on the drawings in general notes and on plans to indicate specific areas designed for different loads. Column Design Loads shall be noted in column schedule.

5. DESIGN AND CONSTRUCTION PROCEDURES:

Use current topics pertaining to structures, mechanical and electrical Systems.

6. APPLICABLE STRUCTURAL MASTER SPECIFICATIONS INDEX:

<u>SECTION</u>	<u>DATE</u>	<u>TITLE</u>
01 45 29	07-13	TESTING LABORATORY SERVICES
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31 23 19	10-12	DEWATERING
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31 23 23.33	10-12	FLOWABLE FILL
31 62 00	10-12	DRIVEN PILES
31 63 16	10-12	AUGER-CAST GROUT PILES
31 63 26	10-12	DRILLED CAISSONS
03 30 00	10-12	CAST-IN-PLACE CONCRETE
03 30 53	10-12	(SHORT FORM) CAST-IN-PLACE CONCRETE
03 41 33	07-11	PRECAST STRUCTURAL PRETENSION CONCRETE
05 12 00	11-12	STRUCTURAL STEEL FRAMING
05 21 00	03-10	STEEL JOIST FRAMING
05 31 00	10-12	STEEL DECKING
05 40 00	07-11	COLD-FORMED METAL FRAMING

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