Summary of Modifications/Changes in this Update

This Summary of Changes is for information only.
It is not a part of the referenced document, and should not be used for project documentation.

U.S. Department of Veterans Affairs ♦ Office of Construction & Facilities Management

DATE OF THIS VERSION (new)

February 1, 2014

TITLE OF DOCUMENT (new title if applicable):

Structural Design Manual for Hospital Projects

DATE OF VERSION BEING SUPERSEDED (old):

August 1, 2009

DESCRIPTION OF DOCUMENT (previous title, number, other identifying data):

Structural Design Manual for Hospital Projects

SUMMARY OF CHANGES IN THIS VERSION:

1. Reference of ACI 318, AISC, and IBC changed to Latest Edition;
2. Deleted metric units of Design Loads; and
3. Updated Strctural Spec. Sections with latest revisions.

February 1, 2014

DEPARTMENT OF VETERANS AFFAIRS

DESIGN INSTRUCTIONS TO ARCHITECTS AND ENGINEERS

LOCATION: VAMC,

PROJECT TITLE:

PROJECT NO.

[ ] SCHEMATICS	**[ ] DESIGN DEVELOPMENT**	**[ ] CONSTRUCTION DOCUMENTS**

STRUCTURAL

STRUCTURAL DESIGN MANUAL FOR HOSPITAL / REPLACEMENT HOSPITAL / CLINICAL ADDITION / DOMICILIARY / NURSING HOME / PSYCHIATRIC BUILDING / OUTPATIENT CLINIC / VETERINARY MEDICAL UNIT PROJECTS (February 1, 2014)

FROM: DATE:

Package Preparer:
Telephone Number:

February 1, 2014

STRUCTURAL DESIGN MANUAL
FOR HOSPITAL PROJECTS
DEPARTMENT OF VETERANS AFFAIRS

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STRUCTURAL DESIGN MANUAL
FOR HOSPITAL PROJECTS
DEPARTMENT OF VETERANS AFFAIRS

February 1, 2014

1. CRITERIA UNIQUE TO VA:

A. All new facilities, new additions, and existing buildings requiring major renovation and/or seismic strengthening shall be designed in accordance with VA Handbook H-18-8, "Seismic Design Requirements”.

B. All new buildings, additions and major alterations shall be designed to meet the requirements of Physical Security Design Manual for VA Facilities.

2. GENERAL:

2.1 Structural design of VA facilities shall comply with the latest editions of the following:

A. Reinforced concrete design - , "Building Code Requirements for Reinforced Concrete and Commentary", ACI 318, 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 Team Project Management 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 the 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 IBC requirements, except as shown in Table 1 and Table 2.

3.2 Allowance of 20 psf shall be made for partitions on floors where specified live load is less than 100 psf, in addition to all other loads. Where live loads are 100 psf and greater, specific partition locations may be used for design; however, appropriate notes must be made on the drawings.

3.3 Provision shall be made in designing floors for a concentrated load of 2000 lb, placed upon any space 2.5 ft square, wherever this load upon an otherwise unloaded floor would produce stresses greater than those caused by the uniform load. On walk-on ceiling the design concentrated load shall be 300 lb.

3.4 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.

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

3.6 Where actual occupancy load requirements or concentrated equipment loads distributed over a reasonable area exceed the equivalent generalized uniform live loads, the areas in question shall be designed to meet the specific load conditions. Refer to Table 2 of selected functional areas with special uniform load requirements and heavy equipment loads that may require special consideration.

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

OCCUPANCY OR USE	LIVE LOADS (psf)
All Future Floors (Unless Otherwise Noted)	100
Interstitial Floor (Walk-on Ceilings)	25**
Loading Docks and Platforms	250
Lobbies	100
Mechanical Rooms	150
Administrative Services	80
Clinical and Support Services	80
Corridors:	
In Wards	60
All Others	100
File and Computer Rooms	125
Kitchen and Dining Areas	100
Pharmacy and Retail	100
Ward Rooms	40
Research and Education Buildings	100

Footnotes:

* 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 schedules.

** This load may be reduced to 15 psf in combination with floor live load.

TABLE 2 - SPECIAL LOAD REQUIREMENTS:

FUNCTIONAL DEPARTMENTS	SPECIAL AREAS UNIFORM LOAD	LOADS psf	SPECIAL EQUIPMENT LOADS
Audiology and Speech Pathology			Audiometric Room
Dietetic Service	Refrigeration & Frozen Storage	200	Baking Oven, Cooking Oven, Refrigerators, Ice-making Machines, Dishwashers
Engineering Service	Maintenance & Repair Shops	150	
General Offices			Addressograph, Power File Record Retriever
Laboratory Service	Morgue	150	
Laundry	Washers/Dryers	200	Flat Work Ironer Monorail, Washer-Extractor
Medical Research	Gas Cylinder Storage	250	Mechanical Cage Washer, Concrete Dog Cages
Radiology Service	X-Ray Film Storage Stationary Files Mobile (Rolling)	 250 400	Radiographic & Fluroscope Equip, Tomograph Table Cobalt 60 Units, Linear Accelerators, Overhead Equipment
Rehabilitation Medicine			Hubbard Tank, Therapy Tank & Pool, Overhead Equipment
Supply Service	Light Storage Heavy Storage/ Warehouse Loading Dock	150 250 250	Automatic Cart Washer, Heavy Sterilizer, Storage Tank, Vaults
Miscellaneous Services	Mobile (Rolling) Storage & Record Files	300	

6. APPLICABLE STRUCTURAL MASTER SPECIFICATIONS INDEX:

SECTION	DATE	TITLE
01 45 29	07-13	TESTING LABORATORY SERVICES
02 41 00	03-13	DEMOLITION
31 23 19	10-12	DEWATERING
31 20 00	10-12	EARTH MOVING
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 23 00	07-11	STRESSING TENDONS
03 30 00	10-12	CAST-IN-PLACE CONCRETE
03 30 53	10-12	(SHORT FORM) CAST-IN-PLACE CONCRETE
03 37 13	07-11	SHOTCRETE
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 36 00	07-11	COMPOSITE METAL DECKING
05 40 00	07-11	COLD-FORMED METAL FRAMING

Note: Specification sections include metric units.

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