



WARNING !!

This edition (6th, updated to 19 Sept. 1997) of the Massachusetts State Building Code was bound incorrectly.

First comes the *User's Guide* (30p.) which is correct. The next section are the *amendments* and then the final section is the text of the Building Code itself.

Each section has been marked. To use effectively start by looking in the last section which is the Building Code (6th Edition, updated to 19 Sept. 1997) and then check the amendments (updated to 12 Dec. 1997) in the second section to see if there have been any changes.

Sorry for the confusion!





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THE MASSACHUSETTS STATE BUILDING CODE

USER'S GUIDE

to
780 CMR

Sixth Edition

COMMONWEALTH OF MASSACHUSETTS

Published by
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Secretary of the Commonwealth

THE USERS' GUIDE TO THE SIXTH EDITION

PART I - OVERALL CHANGES

The *Sixth Edition* of the Massachusetts State Building Code is based on the provisions of the 1993 BOCA National Building Code. However, since significant changes have been made to the national code, the *Sixth Edition* is considered a unique document to the Commonwealth. One should not assume that the two documents are compatible. There are several reasons for differences between the two codes, some of which are identified below.

(1) In some instances, requirements of Massachusetts General Laws (M.G.L.) conflict with provisions of the national code. Since law is superior to regulation, the national code must be stripped of any conflicting language.

(a) The Board of Building Regulations and Standards (BBS) is fortunate to employ the services of various subcommittees comprised of learned and experienced professionals who donate their time in review of the code. Members of these subcommittees focus on certain aspects of the code and adapt its language to suit local peculiarities that may not be considered in the national code. These subcommittees include:

1. The Geotechnical Advisory Committee,
2. The Fire Prevention, Fire Protection Advisory Committee,
3. The Loads Advisory Committee,
4. The Seismic Advisory Committee, and
5. The Energy Advisory Committee.

Also, Massachusetts must coordinate the provisions of the state building code with the provisions of other specialized codes under the control of separate independent boards. Some of the specialized codes include:

6. The Fire Prevention Code (527 CMR),
7. The Elevator Code (524 CMR),
8. The Architectural Access Regulations (521 CMR),
9. The Plumbing and Gas Code (248 CMR), and
10. The Electrical Code (527 CMR).

(b) The following chapters, are considered entirely unique to the Commonwealth differing significantly from the national code, and are so identified with a parenthetical statement below the chapter title.

The chapters include:

- Chapter 1 - Administration
- Chapter 9 - Fire Protection Systems
- Chapter 11 - Accessibility
- Chapter 13 - Energy Conservation
- Chapter 16 - Structural Loads
- Chapter 18 - Foundations and Retaining Walls
- Chapter 27 - Electrical Wiring and Equipment
- Chapter 29 - Plumbing and Gas Fitting
- Chapter 30 - Elevator and Conveying Systems
- Chapter 34 - Repair, Alteration and Change of Use of Existing Buildings
- Chapter 35 - Manufactured Buildings, Building Components and Mobile Homes
- Chapter 36 - The One and Two Family Dwelling Code

(c) Changes in other chapters are identified with bolded, italicized face type.

(2) Part II of this Guide contains a summary of some of the major changes relative to the national code and to the *Fifth Edition* of the Massachusetts Building Code.

(a) The first change a user will note in the *Sixth Edition* of the code is the numbering system. Recently, three national code agencies joined forces in the hopes of someday producing a uniform, international building code. The first matter that these agencies agreed upon in this pursuit was to use a chapter format in lieu of the article system. Massachusetts has followed this lead.

(b) Recognizing the frustration that may develop in attempting to retrieve information utilizing this new system, a cross-index of article and primary section numbers of the *Fifth Edition* relative to the chapter and primary section numbers of the *Sixth Edition* is included as Part III of this Guide (again, please note that Part III is *not* meant as an absolute authoritative source identifying all changes from the *Fifth Edition* - refer to the actual code for definitive requirements).

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PART II - SUMMARY OF CHANGES TO EACH CHAPTER

CAUTION

These summaries are meant as a transition tool for users of the *Sixth Edition* of the Massachusetts State Building Code and only highlight certain major changes. The summaries are not designed as an authoritative source for all changes either from the National Building Code or the *Fifth Edition* of the Massachusetts State Building Code. Always refer to the actual code documents for definitive requirements.

Part II of this Guide contains brief summaries of the major changes from BOCA National Building Code, and from the Fifth Edition of the Massachusetts State Building Code.

CHAPTER 1 - ADMINISTRATION (Fifth Edition Article 1)

Differences from National Building Code:

Chapter 1 is considered unique to Massachusetts. Essentially it is a combination of *Fifth Edition* requirements and the national document.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Some of the major changes in Chapter 1 occur in Section 105, which defines the qualifications and certification requirements for all those who serve as building code enforcement officials in the Commonwealth; Section 110.0, which delineates procedures for the placement of manufactured buildings (requiring a licensed construction supervisor to secure a permit for the work and a certified set crew to install the structure); Section 116.0, which more clearly defines the role of registered architects and professional engineers in the course of building construction; and Section 121.0 which defines the remedy available to a person ordered to remove a dangerous structure (the route is through the courts, not through a board of appeals).

CHAPTER 2 - DEFINITIONS (Fifth Edition Article 2)

Differences from the National Code

All definitions from the national code appear in this chapter. In a few instances, the wording was modified to reflect Massachusetts law or to clarify a definition. Also, some definitions specific to Massachusetts were added, such as inspector of buildings and local inspector.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Although many definitions are provided for in Chapter 2, the national code chooses to separate others and place them within the chapter in which they most closely relate. For instance, words and terms specific to means of egress requirements are found in Chapter 10, not Chapter 2.

CHAPTER 3 - USE OR OCCUPANCY (Fifth Edition Article 3)

Differences from the National Code:

Chapter 3 is compatible with the national code. However, portions of Section 313.0, *Mixed Use Groups*, are effected by changes that occur in Chapter 9 relative to fire suppression requirements of certain buildings.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

A feature added to the national code is found Section 302, which defines requirements for certain specific occupancy areas within buildings. Also, Section 307.0 describes four subclassifications for the *High Hazard Use Group Classification*, whereas, the *Fifth Edition* defines only one.

CHAPTER 4 - SPECIAL USE AND OCCUPANCY*(Fifth Edition Article 6)***Differences from the National Code:**

Chapter 4 is consistent with the National Code from Sections 401.0 to 421.0 excepting changes incorporated due to conflicts with Massachusetts laws and/or regulations, such as those that occur in Section 603.0, defining the limits of high rise buildings, and Section 421.0, defining requirements for inground swimming pools.

Sections 422.0 through 429.0 are unique to the Commonwealth, defining special uses that do not appear in the national code. Some of these sections have been brought forward from the *Fifth Edition* of the code with little change; they include provisions for existing structures in Section 422.0, summer camps for children in Section 425.0, and detoxification centers in Section 428.0.

Sections 423.0, 427.0 and 429.0 which define special code provisions for group residences, limited group residences, and group dwelling units have been brought forward but have been modified to reflect new philosophies in the care of the occupants of these residences. These changes appear for the first time in the *Sixth Edition* of the code. The day care provisions in Section 424.0 have also been modified to increase occupant safety.

Possibly the most significant change to Chapter 4 appears in Section 426.0. This section defines requirements for bulk storage merchandising buildings. Such buildings contain sales areas with high piled combustible commodities, and/or hazardous materials. Inherently, these structures present different fire and life safety risks than traditional retail structures. Section 426.0 provides adequate safety to the patrons of these facilities and reduces the possibility of excessive property loss due to fire. The section is newly developed for the *Sixth Edition* of the code.

Differences from the *Fifth Edition* of the Massachusetts State Building Code:

Chapter 4 is significantly different than the compatible *Fifth Edition* of the code. To start, special use provisions are no longer found in Article 6, also several new provisions have been added such as those defined above, and more detailed requirements for high hazard uses.

CHAPTER 5 - GENERAL BUILDING LIMITATIONS*(Fifth Edition Article 5)***Differences from the National Code:**

Chapter 5 is almost entirely compatible with the national code, excepting the addition of note *m* to Table 503 which cautions the code user to a distinction of Massachusetts general law requiring *hospitals, other than college or school infirmaries, to be erected of Type 1B construction or better.*

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Chapter 5 is very similar to the comparable *Fifth Edition* article. Methodologies relating to building size have remained constant for years, dating to work of insurance companies that originally developed the requirements. However, some requirements that appeared in the building limitations section of Article 5 have been moved to a more appropriate place. Provisions for accessibility, for instance are found in Chapter 11.

CHAPTER 6 - TYPES OF CONSTRUCTION*(Fifth Edition Article 4)***Differences from the National Code :**

Chapter 6 is entirely compatible with the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Types of construction are located in Article 4 in the *Fifth Edition*. Location is the major change in the new code, some language is condensed relating to the description for the five types of construction.

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CHAPTER 7 - FIRERESISTANT MATERIALS AND CONSTRUCTION

*(Fifth Edition Article 9)***Differences from the National Code:**

Chapter 7 is entirely compatible with the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code :

Fire-resistance rating of construction materials were located in Article 9 of the *Fifth Edition*. Along with location, several changes have occurred in the code text. Examples of change are found in Section 708.0 which limits opening sizes in fire wall assemblies, Section 713.0 which defines minimum fire resistance ratings for floor/ceiling and roof/ceiling assemblies in certain residential buildings, Section 717.0 which determines approval of fire dampers, and fire damper ratings, and 720.0 which requires the installation of firestopping and draftstopping.

CHAPTER 8 - INTERIOR FINISHES

*(Fifth Edition Article 9)***Differences from the National Code:**

Chapter 8 is entirely compatible with the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code :

Interior finishes were part of Article 9 in the *Fifth Edition* under Sections 922.0 through 925.0. Since interior finishes can have a significant effect on a building's internal fire load. These provisions are separated in the *Sixth Edition* to emphasize the importance of properly regulating the placement of combustible trim, floor finishes, and interior hangings and decorations. Additionally, Section 806.0 limits the use of combustible materials in Types 1 and 2 construction. Chapter 8 should be utilized in concert with the provisions of 527 CMR, The Massachusetts Fire Prevention Code.

CHAPTER 9 - FIRE PROTECTION SYSTEMS

*(Fifth Edition Article 10)***Differences from the National Code:**

The provisions of Chapter 9 were developed by the *Fire Prevention/Fire Protection Advisory Committee* whose make-up is defined in the forward of the code.

Chapter 9 is significantly different than the national code and is considered unique to the Commonwealth, particularly in its requirements for fire suppression systems. Section 904.0 identifies where fire suppression systems are required in buildings based upon the building's size and use group classification.

Recognizing inherent life safety hazards posed by certain building types, and further recognizing the tremendous loss due to fire that has occurred in certain building types over the years, the *Sixth Edition* of the code requires fire suppression systems to be installed in buildings at levels not anticipated by the national code. For instance Section 904.2 of the national code, allows an assembly use, such as a motion picture theater, to be erected unsuppressed up to 12,000 square feet. The comparable *Sixth Edition* section requires a fire suppression system to be installed when it exceeds 8,000 square feet.

Also, Chapter 9 does not recognize the term *fire area*, which is often used in the pages of the national code. The term fire area is defined as "*the aggregate floor area enclosed and bounded by fire walls, exterior walls, or fire separating assemblies*". Utilizing this concept in the design of mixed use buildings (Section 313.0 of the code) allows the code user to design and erect buildings that sacrifice fire suppression for fire resistive construction. Essentially, the result of such a design is a building that is (or may be) suppressed in one area, but not another. Such buildings may provide a false sense of security for the occupant, and cause logistical problems for fire service personnel who must fight the fire (ie: the firefighter does not necessarily know which portion of the building is fitted with a suppression system, and which is not; a fact he needs to know to adequately fight the fire or deal with the emergency). This is not to say that separated mixed use buildings are not an option under the new code. However, once the size of a building exceeds a certain dimension (dependent upon its use group), a suppression system is required, regardless of whether the uses are separated from one another with fire-resistance rating construction, which may render the separated mixed use option irrelevant.

Changes to Chapter 9 are the result of many months of review of the national code. Some of the reasons for change are identified above. However, there are additional benefits to both the code user and the building occupant resulting from these changes. It is worth noting that many municipalities in the Commonwealth experience some difficulty developing and maintaining a properly staffed fire department, and are often challenged in fighting larger fires. With the changes in fire suppression requirements, some of the burden may be lifted from these departments.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Chapter 9 has not only been relocated in the Sixth of the code, but has also been significantly changed in technical content. The format of Chapter 9 takes a more sobering look at issues of fire suppression and alarming and presents requirements in a more concise and logical pattern. It may be considered as different from *Fifth Edition* Massachusetts code as it is from the national code.

ARTICLE 10 - MEANS OF EGRESS

(*Fifth Edition* Article 8)

Changes from the National Code:

Chapter 10 is nearly compatible to the national code. Changes appear in limited sections.

The first change, an addition to the national code, occurs with the insertion of Section 1004.2 which empowers the building official to issue an *exit order* to a building owner when a hazardous egress condition is cited. Although this language is consistent with current practices in the Commonwealth, it is different from the requirements of the national code.

A second change occurs in Table 1010.3 of the code. Unlike the national code, the *Sixth Edition* only allows one means of egress from buildings in very limited instances (ie: use groups B and S-2 that meet ardent restrictions in terms of building size and occupant travel distance).

A third change appears in Section 1017.4.1 pertaining to the locking of egress doors. Actually, the section varies from the national code in two counts under this section. First, point number 8 under section 1017.4.1 allows for the locking of certain doors in I-1 and I-2 occupancies when other life safety concerns are at issue. Second, Section 1017.4.1.2 allows for special locking arrangements in certain business occupancies when security issues conflict with code requirements. In each of these instances, the code has responded to building owner needs, carefully balancing issues of security and life safety without to either. When egress doors are locked under these provisions, additional life safety features are required.

Additional changes are made to the provisions of Chapter 9 to ensure that it jibes with Massachusetts law and regulation.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Many of the comments expressed above apply in respect to changes from the *Fifth Edition* Massachusetts code text. Means of egress requirements, in many instances, have changed and should be carefully reviewed by the code user.

CHAPTER 11 - ACCESSIBILITY

(*Fifth Edition* Section 512.0)

Differences from the National Code:

The provisions of Chapter 11 as they appear in the national code have been deleted. Chapter 11 in the *Sixth Edition* refers to 521 CMR, the *Rules and Regulations* of the Architectural Access Board (AAB regulations). The Architectural Access Board is empowered to promulgate these regulations under Massachusetts general law. Although it is a separate regulation under the control of a different agency, the provisions of the AAB regulations are enforced by municipal and state building officials. The code user is cautioned that there may be significant differences from the national code, and should refer only to 521 CMR for regulations pertaining to building accessibility.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Reference to AAB regulations appeared in Section 512.0 of the *Fifth Edition* of the code. See above comments for changes.

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ARTICLE 12 - INTERIOR ENVIRONMENT

*(Fifth Edition - Article 7)***Differences from the National Code:**

The *Sixth Edition* of the code requires all newly constructed buildings to mechanically ventilate bathrooms and toilet rooms (natural ventilation of such spaces is not allowed as a substitute for mechanical ventilation).

Access to attics and crawl spaces, if separating conditioned from unconditioned space, shall be weather-stripped and closed tightly.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Bathroom mechanical ventilation requirements now include one- and two-family housing whereas the *Fifth Edition* of the code exempted one- and two-family housing bathrooms and toilet rooms from such required mechanical ventilation.

Access to attics and crawl spaces, if separating conditioned from unconditioned space, shall be weather-stripped and close tightly.

Rat-proofing requirements are now found in Chapter 12

ARTICLE 13 - ENERGY CONSERVATION

*(Fifth Edition - Article 31)***Differences from National Code:**

Chapter 13 of the Code does not yet require that new construction low-rise residential buildings conform to the requirements of the Council of American Building Officials (CABO) Model Energy Code, 1995 version (MEC95).

Chapter 13 will, however, require conformance to a Massachusetts version of MEC95 commencing March 1, 1998 - see front sheet of Chapter 13 and front of Appendix J.

One- and two-family housing now explicitly requires thermostats for each floor containing conditioned space.

Electrical outlet plate gaskets are now required on all receptacles, switch or other electrical boxes in walls separating conditioned from unconditioned space.

Changes from the *Fifth Edition* of the Massachusetts State Building Code

See "Differences from National Code" above.

CHAPTER 14 - EXTERIOR WALL COVERINGS

*(Fifth Edition Article 21)***Differences from the National Code:**

Chapter 14 is entirely compatible with the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Changes made relative to provisions for exterior walls are in respect to its location in the code and changes reflecting technological advances in anchoring systems and building material combustibility.

CHAPTER 15 - ROOFS AND ROOF STRUCTURES

*(Fifth Edition Article 23)***Differences from the National Code:**

Chapter 15 is entirely compatible with the national code, except, generic language referring to climactic conditions not relevant to the Commonwealth have been deleted.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Changes made relative to provisions for roof and roof structures are in respect to location in the code and changes reflecting technological advances.

CHAPTER 16 - STRUCTURAL LOADS (Fifth Edition Article 11)

Differences from the National Code:

The provisions of Chapter 16 were reviewed and further developed by both the *Loads* and the *Seismic Advisory Committees* whose make-up are defined in the forward of the code.

Wind load provisions have been simplified; snow load zones are considered unique to Massachusetts; the use of importance factors for snow load design is not utilized; seismic design is based on a peak velocity related acceleration (a_v) of 0.12 throughout the entire state; superfluous requirements dealing with loading criteria outside Massachusetts have been deleted.

Changes from the *Fifth Edition* of the Massachusetts State Building Code :

Seismic deign has been amended to reflect current design philosophy.

CHAPTER 17 - STRUCTURAL TESTS AND INSPECTIONS (Fifth Edition Article 13)

Differences from the National Code:

The provisions are similar to the national code but are enhanced by requiring a specific program of testing and inspections of critical structural items to be developed by the Structural Engineer of record.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

This chapter has been clarified to identify critical inspection procedures for structural materials and processes and further serves to clarify some of the responsibilities of registered professionals under construction control (5th edition section 127 - 6th edition section 116)

CHAPTER 18 - FOUNDATIONS AND RETAINING WALLS (Fifth Edition Article 12)

The provisions of Chapter 18 were reviewed and further developed by the *Geotechnical Advisory Committee* whose make-up is defined in the forward of the code. The following is a detailed analysis of the their work provided by members of the committee.

(1) For the *Sixth Edition*, the format, terminology and provisions of BOCA (1993) were usually adopted; the technical provisions are generally consistent with those in the *Fifth Edition* of the Massachusetts State Building Code, unless noted in the User's Guide. The User's Guide indicates the specific locations of significant changes which have been incorporated in the *Sixth Edition*, together with comments and backup information. Such changes include:

- (a) Technical changes to existing provisions, which may or may not be consistent with BOCA.
- (b) New provisions which have been adopted by the State Board of Building Regulations and Standards since issuance of the *Fifth Edition* (1990).
- (c) New provisions which are included in BOCA, but were not contained in the *Fifth Edition*.
- (d) New provisions which are introduced in the *Sixth Edition*.

All references herein to BOCA are to the BOCA National Building Code, 1993 (*Twelfth Edition*).

1802.0 FOUNDATION INVESTIGATIONS

1802.1 Where required: 1202.1 (Fifth Ed.) retained; BOCA requirements for specific number of borings for building area not adopted.

1802.1.1 Seismic investigation: criteria established for field investigation/report on evaluation of "liquefaction" potential, with reference to Section 1805.3 (1612.3 in the Fifth Ed.)

1802.2 Soil samples and boring reports: provisions of 1202. 2 (Fifth Ed.) retained, which require that copies of the results be filed with the code official.

1803.0 SOIL BEARING TESTS

1803.0 Soil bearing tests: all of 1203.0 (Fifth Ed.) retained, in lieu of 'Soil test procedure'.

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1804.0 LOAD BEARING VALUE OF SOILS

1804.1 Soils report: 1201.3.2 (Fifth Ed.) provisions retained; BOCA list of requirements for prepared fill in report are not included.

1804.2 Satisfactory foundation materials: 1201.2 (Fifth Ed.) retained.

1804.3 Presumptive load bearing values: 1201.3 (Fifth Ed.) provision for approval of higher bearing pressures retained, and 1201.3.1 reference to Appendix for guidelines for classification of bearing materials retained.

TABLE 1804.3 Allowable Bearing Pressures, has been retained from the Fifth Ed. (TABLE 1201) with some minor modifications.

The values in BOCA (TABLE 1804.3) are considered inappropriate for Massachusetts.

1201.3.2 (Fifth Ed.) provisions for compacted fill below foundations and for field control are retained.

1804.4 Lightweight structures: 1201.3 (Fifth Ed.) retained.

1805.0 ALLOWABLE FOUNDATION LOADS

1805.2 Soil capacity: Provision added, which allows up to 33% increase in bearing pressures for soil types indicated, for load combinations which include wind or seismic. This provision applies to all foundation types. A similar provision in the Fifth Ed. (1206.2) that applied only to footings has been deleted.

1805.3 Liquefaction: These provisions have been transferred in their entirety from 1113.8 (Fifth Ed.).

1805.4 Vertical pressure: 1204.4 (Fifth Ed.) retained.

1805.5 Settlement analysis: 1204.5 (Fifth Ed.) retained.

1805.6 Disturbance of bearing soils: 1204.6 (Fifth Ed.) retained.

1805.7 Rock foundations: provisions added for increased bearing pressures, based on load tests (per BOCA).

1806.0 DEPTH OF FOOTINGS

1806.1 Frost Protection: modified to apply to structures larger than 100 sq. feet area or 10 feet high (per BOCA).

1806.2 Isolated footing: The criteria for relative position of soil-bearing footings changed, consistent with BOCA (See 1205.2, Fifth Ed.).

1806.3 Depth of spread footings: 1205.3 (Fifth Ed.) retained.

1807.0 FOOTING DESIGN

1807.1 Design loads: 1206.1 (Fifth Ed.) retained.

1807.4 Eccentric loads: 1206.6 (Fifth Ed.) retained.

1810.0 CONCRETE FOOTINGS

1810.2.1 Footing seismic ties: Requirements for seismic ties between footings for Category D structures have been added consistent with BOCA (1810.2.1). These provisions differ from BOCA in that the ties are to be designed for a force equal to 10% of the larger column dead load plus live load in lieu of "a force equal to 25% of the effective peak velocity-related acceleration (A_v) times the column dead load plus live load". Under 1113.6.9 (Fifth Ed.) interconnections of footings with ties were not specifically required, but were to be considered in the design.

1812.0 FOUNDATION WALLS

1812.2 Definitions and 1812.3 Minimum thickness: definitions have been added and requirements modified from those of 1222.2 (Fifth Ed.); also, Table 1812.3.2 has been changed.

1812.6 Lateral stability: there is an added reference to 1825.0 for seismic design requirements.

1814.0 MAT RAFT AND FLOAT FOUNDATIONS

1814.2 Settlement analysis: the requirement for a settlement analysis (1211.2, Fifth Ed.) is retained.

1815.0 PIER FOUNDATIONS

1815.1 General: The definitions, as given in 1212.1 (Fifth Ed.) are retained but with modifications: 1) "and piles installed by the hollow stem auger method" is deleted (refer now to 1820.2) and 2) "other non-circular foundation elements" are now included.

1815.2.1 Foundation ties: the provisions for interconnection between piers are consistent with BOCA (1815.2), except that the ties are to be designed for a force equal to 10% of the larger column dead load plus live load in lieu of "a force equal to 25% of the effective peak velocity-related acceleration (A_v) times the column dead plus live load". (This in effect retains the requirement in 1113.6.9 (Fifth Ed.) for interconnection of piers, with a similar magnitude of design force in the tie, which is more conservative than BOCA.)

1815.2.2 Seismic reinforcement: these new provisions are similar to those now required for cast-in-place concrete piles (see 1820.1.2.1). The provisions in 1820.1.2.1 which were adopted by BOCA, are consistent with the model code provisions issued by FEMA (*NEHRP Recommended Provisions for Seismic Regulations for New Buildings*, 1994 Edition, prepared by the Building Seismic Safety Council for the Federal Emergency Management Agency). Although BOCA does not require seismic reinforcement for piers, it is noted that the FEMA guidelines recommended that the same seismic provisions apply to drilled piers or caissons. Therefore, such provisions are included herein. Note that the "minimum pier design cross sectional area" is defined as the minimum section area, as determined by the allowable design stresses, even though the actual pier section may be larger.

1815.2.3 Pier cap connection: the provisions are similar to those now required for all concrete piles (1816.11.1) which are consistent with the FEMA model code provisions (see 1815.2.2 for reference). Although BOCA does not require the cap connection for piers, such provisions are included herein for consistency with the FEMA recommendation.

1815.2.4 Alternative detailing: This provision allows alternatives to the code-specified minimum reinforcing, similar to the BOCA provision for concrete piles in 1816.11.1.

1815.3 through 1815.11: The existing provisions, in 1212.2 through 1212.10 (Fifth Ed.) are retained; they are considered more complete and appropriate for Massachusetts.

1816.0 PILE FOUNDATIONS

1816.3 Pile bending seismic design: The special provisions of BOCA (1816.3) were adopted for pile reinforcement below buildings assigned to Seismic Performance Category D; this was not required in the *Fifth Edition*. It is noted that this is consistent with the FEMA document referenced in 1815.2.

1816.4 Protection of pile materials: the existing provisions, 1213.3 (Fifth Ed.) are retained; they are considered more complete and appropriate for Massachusetts.

1816.5 Lateral support: 1213.4 (Fifth Ed.) is retained; reference to "fluid soil" is deleted.

1816.7 Stability: 1213.6 (Fifth Ed.) is retained.

1816.8 Structural integrity: 1213.7 (Fifth Ed.) is retained.

1816.10 Splices: 1213.9 (Fifth Ed.) retained, including requirement for all pile splices to "develop at least 50% of the capacity in bending". In addition, the BOCA provisions for design requirements for splices located in the upper ten feet of the embedded pile are adopted.

1816.11.1 Pile cap seismic connection: The special provisions of BOCA (1816.11.1) were adopted for seismic connection of all concrete piles to the caps (not required in Fifth Ed.). **Note:** This is a new requirement, which may have an economic impact on pile foundations.

1816.11.2 Pile foundation seismic ties: The provisions for interconnection between pile caps are consistent with BOCA (1816.11.2), except that the ties are to be designed for a force equal to 10% of the larger column dead load plus live load in lieu of "a force equal to 25% of the effective peak velocity-related acceleration (A_v) times the column dead plus live load". (This in effect retains the requirements in 1113.6.9 (Fifth Ed.) for interconnection of pile caps; the magnitude of the design force in the tie is more conservative than BOCA.)

1816.13 Inspection: The more detailed requirements of 1213.12 (Fifth Ed.) are retained.

1816.18 Pile Heave: The more detailed requirements of 1213.17 (Fifth Ed.) are retained.

1817.0 ALLOWABLE PILE LOADS

1817.1 through 1817.3: The existing provisions in 1214.1, 1214.2 and 1214.3 (Fifth Ed.) including the requirements for determination of allowable load by the driving formula, friction formula in clay and for jacked piles, are retained. (Note: The description of the design criteria for friction piles in clay has been modified for clarification.)

1817.4 Compression load test: The existing provisions in 1214.4 (Fifth Ed.) are retained; they are more detailed and appropriate for local conditions.

1817.6 Lateral load tests and 1817.7 Tension Load tests: The more detailed existing provisions, of 1214.6 and 1214.7 are retained.

1817.8 Bearing capacity: The existing provisions of 1214.8 (Fifth Ed.) are retained.

1818.0 STRUCTURAL STEEL PILES

1818.2 Allowable stress: The existing provisions in 1215.4 (Fifth Ed.) are retained, including the limit of "35% of the minimum specified yield strength or 12,600 psi." The limitation on stress is a result of driveability considerations.

1818.3 Pile cap seismic connection: The special provisions of BOCA were adopted for connection of steel piles to the caps for buildings assigned to Seismic Category D, (not required in the *Fifth Edition*).

1819.0 CONCRETE-FILLED STEEL PIPE AND TUBE PILES

1819.2 Allowable stress: A distinction is made between top-driven and mandrel-driven piles:

- In 1819.2.1, the existing provisions in 1216.3 (Fifth Ed.) for stress limits due to driveability considerations are retained for top-driven piles.

- In 1819.2.2, the higher allowable limits in BOCA are allowed for piles driven by mandrels which effectively transmit the driving stresses to the bottom of the pile.

1819.3.1 Pile cap seismic connection: The special provisions of BOCA were adopted for pile reinforcement and connection to the cap for all piles (not required in the Fifth Ed.).

1819.5 Placing concrete: the existing provisions in 1216.1 (Fifth Ed.) for alignment criteria of the steel pipe before filling with concrete have been deleted; the reason is that other pile types which cannot be similarly inspected are not subject to such requirements, and such requirements are not generally necessary.

1820.0 CAST-IN-PLACE CONCRETE PILES

1820.1.1 Material: The existing requirement, 1217.1 (Fifth Ed.) for minimum concrete strength is retained (i.e. 3000 psi in lieu of 2500 psi in BOCA)

1820.1.2.1 Seismic reinforcement: The special requirements of BOCA (1820.2.2.1) for pile reinforcement and connection to the cap are adopted (Not required in Fifth Ed.). Note: There are different requirements for buildings assigned to Seismic Performance Category C and D.

1820.1.3 Installation: the installation requirement for all cased, concrete-filled piles are given here, and are referenced in 1820.4.3.2.3 and 1820.5.3.

1820.2 Augered uncased piles: The provisions are now in a new, separate section; this pile type was previously (Fifth Ed.) included in 1212.0 Pier foundations. The provisions have been modified, and are not entirely consistent with BOCA (1820.2).

Note: 1820.2.8 Instrumentation has been added; it requires that the auger rig be equipped with data logging equipment to automatically record vital information during installation.

1820.4 Pressure-injected footings: All provisions are those contained in the REVISIONS to 1217.0 (Fifth Ed.) which were adopted since issuance of the *Fifth Edition* (1990). The revisions, together with an extensive Commentary, were prepared by the Geotechnical Advisory Committee and presented at a Public Hearing on November 30, 1993, and were subsequently approved and filed by the State Board of Building Regulations and Standards.

1820.5 Cased poured concrete piles: The existing provisions in 1217.5 (Fifth Ed.) have been retained, including the limitation of 1,600 psi on design stress.

1820.6 Small diameter grouted piles: These provisions for grouted cast-in-place piles, less than 12 inches diameter, are not included in BOCA (1993). The requirements of 1217.2 (Fifth Ed.) have been re-organized and retained.

1821.0 PRECAST CONCRETE PILES

1821.1 through 1821.3: The BOCA provisions are generally adopted. In 1821.33, the formula for design compressive stress varies slightly from that in 1218.3 (Fifth Ed.) i.e., a smaller deduction is required for the prestress. The 1600 psi limitation on design stress in the Fifth Ed. has been retained.

1821.3.5 Pile cap seismic connection: The special provisions for seismic connection (per 1816.11) also allows for extension of the pile reinforcing strand into the cap, except for buildings assigned to Seismic Performance Category D.

1821.3.6 Spiral seismic reinforcing: Special BOCA provisions for the length of spiral reinforcement for buildings assigned to Seismic Performance Category D are adopted. Also, the requirements for ties in the upper two feet of pile have been added, to be consistent with FEMA.

1822.0 TIMBER PILES

1822.1 through 1822.4: All provisions are those contained in the REVISIONS to 1219.0, which have been adopted since issuance of the *Fifth Edition* (1990).

The Revisions, together with an extensive Commentary, were prepared by the Geotechnical Advisory Committee and presented at a Public Hearing on November 8, 1994, and were subsequently approved and filed by the State Board of Building Regulations and Standards.

1824.0 CONCRETE-FILLED STEEL PIPE WITH STEEL CORE CAISSONS

1824.2 Rock socket: The provisions for the rock socket design have been revised to require that the perimeter bond stress be determined by studies for each installation, but in no case shall the bond stress exceed 200 psi. Also, the minimum outside diameter has been reduced from 24 to 18 inches, consistent with BOCA.

1824.3 Seismic reinforcement: It is required that all caissons have seismic reinforcement, per 1820.1.2.1 (not in *Fifth Edition*)

1824.6 Allowable stress: BOCA provisions adopted, without the stress limits on concrete and steel as contained in 1221.8 (Fifth Ed.); such limits do not apply, since the caisson is not driven.

1824.8 Precautions: The requirement for plumbness (1221.6 Fifth Ed.) has been deleted.

1825.0 RETAINING WALLS

1825.2 Design: Design requirements to resist seismic loads have been added.

CHAPTER 19 - CONCRETE

(Fifth Edition Article 15)

Differences from the National Code:

The provisions are essentially the same as the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Seismic requirements for reinforced concrete have been amended to reflect current design and construction practices consistent with expected seismicity of the region.

CHAPTER 20 - LIGHTWEIGHT METALS

(Fifth Edition Article 19)

Differences from the National Code:

The provisions are the same as the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

No changes from 5th edition other than updating of referenced standards.

CHAPTER 21 - MASONRY

(Fifth Edition Article 14)

Differences from the National Code:

The provisions are essentially the same as the national code with the exception of reinforcing requirements.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Seismic requirements for masonry have been amended to reflect current design and construction practices consistent with expected seismicity of the region

CHAPTER 22 - STEEL

(Fifth Edition Article 18)

Differences from the National Code:

The provisions are essentially the same as the national code with the exception of the inclusion of the provisions of the "Interim Guidelines for Steel Moment Frame Structures" (FEMA 267 - August 1995).

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Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Seismic requirements for steel have been amended to reflect current design and construction practices consistent with expected seismicity of the region.

ARTICLE 23 - WOOD
(*Fifth Edition* Article 17)

Differences from the National Code:

The provisions of Chapter 23 are essentially the same as the national code with the exception of the inclusion of text for the use of native lumber.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Seismic requirements for wood construction have been amended to reflect current design and construction practices consistent with expected seismicity of the region.

CHAPTER 24 - GLASS AND GLAZING
(*Fifth Edition* Article 22)

Differences from the National Code:

Chapter 24 reflects the provisions of the 1996 national building code, and is different only to remain compatible with Massachusetts general law.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

The requirements for glass and glazing have been relocated in the *Sixth Edition* of the code, and have been modified to reflect advances in technology.

CHAPTER 25 - GYPSUM BOARD AND PLASTER
(*Fifth Edition* Article 16)

Differences from the National Code:

Chapter 25 is entirely compatible with the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code :

The requirements for gypsum board and plaster have been relocated in the *Sixth Edition* of the code, and have been modified to reflect changes in technologies.

CHAPTER 26 - PLASTIC
(*Fifth Edition* Article 20)

Differences from the National Code:

Chapter 26 is entirely compatible with the national code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

The requirements for plastic have been relocated in the *Sixth Edition* of the code, and have been modified to reflect changes in technologies.

CHAPTER 27 - ELECTRICAL WIRING AND EQUIPMENT
(*Fifth Edition* Article 27)

Differences from the National Code:

Chapter 27 has been deleted from the national code in its entirety. Electrical wiring and equipment is regulated by a separate state agency, and is made part of the code by reference.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

See comments above.

CHAPTER 28 - MECHANICAL SYSTEMS*(Fifth Edition - Article 25)***Differences from National Code:**

Chapter 28 of the *Sixth Edition* of the code contains Section 2812.0 which sets forth requirements for power venters and acknowledges other jurisdictions which also regulate the installation of power venters (Board of Fire Prevention Regulations for oil-fired appliances; see 527 CMR and the Plumbing and Gas Board for gas-fired appliances; see 248 CMR).

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Explicit construction requirements for boiler rooms have been removed from the *Sixth Edition* of the Massachusetts State Building Code.

CHAPTER 29 - PLUMBING SYSTEMS*(Fifth Edition - Article 28)***Differences from National Code:**

Massachusetts plumbing and gas requirements are controlled by the Plumbing and Gas Code - 248 CMR and promulgated by the Plumbing and Gas Board and such requirements are typically not controlled by the State Building Code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Chapter 29 now also identifies Massachusetts laws and regulations that involve licensed refrigeration technicians and pipefitters.

ARTICLE 30 - ELEVATORS*(Fifth Edition - Article 26)***Differences from National Code:**

Massachusetts elevator requirements are controlled by the Elevator Regulations - 524 CMR, promulgated by the Board of Elevator Regulations and such requirements are typically not controlled by the State Building Code.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

The detailed requirements set forth in the *Fifth Edition* of the State Building Code have been removed to ensure clarification of the jurisdiction of both the Board of Building Regulations and Standards and the Board of Elevator Regulations.

CHAPTER 31 - SPECIAL CONSTRUCTION*(Fifth Edition Articles 6, 21, 19 and 30)***Differences from the National Code:**

Chapter 31 is essentially the same as the national code. However, substantive changes have been made to the Flood Resistant Construction provisions of Section 3107.0. Additional changes have been made to remain compatible with Massachusetts general law and regulation.

Changes from the *Fifth Edition* of the Massachusetts State Building Code :

Requirements in Chapter 31 were scattered about the pages of the *Fifth Edition*. They have been organized in a more logical fashion in Chapter 31, and have been modified to reflect advances in technology. Also see comments above.

CHAPTER 32 - CONSTRUCTION IN THE RIGHT-OF-WAY*(Fifth Edition Articles 7 and 30)***Differences from the National Code:**

Chapter 32 is essentially the same as the national code, changed only remain compatible with Massachusetts general law and regulation.

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Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Requirements in Chapter 32 were scattered about the pages of the *Fifth Edition*. They have been organized in a more logical fashion in Chapter 32, and have been modified to reflect advances in technology.

CHAPTER 33 - SITE WORK, DEMOLITION AND CONSTRUCTION
(*Fifth Edition* Article 30)

Differences from the National Code:

Chapter 33 is essentially the same as the national code, changed only remain compatible with Massachusetts general law and regulation.

Changes from the *Fifth Edition* of the Massachusetts State Building Code :

Requirements in Chapter 33 have been organized in a more logical fashion and have been modified to reflect advances in technology.

**CHAPTER 34 - REPAIR, ALTERATION, ADDITION AND CHANGE OF USE
OF EXISTING BUILDINGS**
(*Fifth Edition* Article 32)

Differences from the National Code:

Chapter 34 has been substantially modified from the national code in terms of technical content and format.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

The requirements for the repair, alteration, addition and change of use for existing buildings have been modified from the provisions of Article 32 and presented in a more logical fashion. Section 3408.0 presents structural requirements for existing buildings that are new to both Massachusetts and the national code.

Additionally, Chapter 34 differs from the *Fifth Edition* of the code in several ways, including:

- (1) Guidance on unsafe lighting and/or unsafe ventilation is now presented in Chapter 34;
- (2) A definition for "substantial renovation" is provided;
- (3) Emphasis of the need for an evaluation of existing buildings that fall under the requirements of "controlled construction" is provided;
- (4) Requirements for continuation of the same use group or a change to a use group resulting in a change in Hazard Index of one or less have been combined;
- (5) Clarification as to when Fire Protective Systems are required, is provided;
- (6) Energy provisions for any existing building undergoing building permissible work are provided and clarified and will further change (there will be an impact on "replacement windows" on January 1, 1999) - see the front piece to Chapter 13 which is also repeated as the front piece to Appendix J;
- (7) Structural requirements for existing buildings are now delineated;
- (8) "Historic Buildings" requirements are now found in Chapter 34, whereas in the *Fifth Edition* of the Code, "Historic Buildings" criteria was found in Article 6.

**CHAPTER 35 - MANUFACTURED BUILDINGS, MANUFACTURED BUILDING
COMPONENTS AND MANUFACTURED HOUSING**
(*Fifth Edition* - Article 33)

Differences from National Code:

Chapter 35 in concept and specific requirements is unique to Massachusetts.

Changes from the *Fifth Edition* of the Massachusetts State Building Code:

Chapter 35 of the *Sixth Edition* of the State Building Code differs from Article 33 of the *Fifth Edition* of the Code in several ways, including:

- (1) A definition of the "Installer of Manufactured Homes" has been created, and;
- (2) Construction documents requirements have been clarified, and;
- (3) The homeowner exemption for the acquiring of the building permit has been removed and it is now necessary for a licensed construction supervisor to apply for the permit, oversee site, footing and foundation work and if the licensed construction supervisor is also an "Installer of Manufactured Homes", the license holder may/shall also oversee installation of the Manufactured Home onto the foundation system and ensure proper tying of the various modular units together before turn over to the

Homeowner; otherwise in addition to the license holder being involved, a factory certified "Installer of Manufactured Homes" shall be present to ensure proper installation and bolt-up of the Manufactured Home before turn over to the Homeowner.

CHAPTER 36 - ONE AND TWO FAMILY DWELLING CODE (Fifth Edition - Article 34)

Differences from National Code:

Chapter 36 utilizes the general format of the CABO ONE AND TWO FAMILY DWELLING CODE, 1995 EDITION, but is significantly altered throughout to reflect Massachusetts requirements.

Changes from the Fifth Edition of the Massachusetts State Building Code:

Chapter 36 of the *Sixth Edition* of the State Building Code differs from Article 34 of the *Fifth Edition* of the Code in a number of ways, including:

- (1) In the Definitions section, DMR Group Homes are defined in terms of the Residential Use they most likely resemble (R-4, R-3, R-2 or R-1, as applicable), and;
- (2) the Uniform Snow Load Maps have been clarified by city or town, and;
- (3) attached garage fire separation from the main house has been redefined, and;
- (4) mechanical ventilation of bathroom and toilet rooms is now required, and;
- (5) clarification of the venting of special spaces, such as roofs, eaves, etc. reflects the requirements of the main body *Sixth Edition* Code, and;
- (6) attic access between conditioned and unconditioned space is explicitly required to be weather-stripped and pull-down doors must close tightly, and;
- (7) the fire protections systems requirements for one and two family dwellings has been refined to reflect the requirements of Massachusetts and NFPA-72, (photo-electric smoke detectors and the battery backup of all single station and multiple station smoke detectors are addressed) and;
- (8) energy conservation requirements, although not yet significantly changed (thermostats are now required on every story that contains heated and/or cooled space), will change on March 1, 1998 to reflect requirements of Massachusetts and the CABO Model Energy Code, 1995 version - see the front piece to Chapter 13 which is also repeated as the front piece top Appendix J, and;
- (9) Span tables have been updated and expanded, and;
- (10) The fireplace, chimney and solid fuel-burning appliance requirements have been updated to Massachusetts requirements, and;
- (11) Recognition of the multiple jurisdictions and regulations pertaining to the design and installation of comfort heating appliances has been placed in Chapter 36; i.e., in addition to the State Building Code (780 CMR), the Plumbing and Gas Code (248 CMR) and the Fire Prevention Regulations (527 CMR) also are identified, and;
- (12) Solar system criteria is also found in Chapter 36.

DESCRIPTION OF APPENDIX J

Appendix J, "Energy Conservation for Low-Rise Residential Buildings" is currently unique to Massachusetts and is referenced from Chapter 36. Appendix J carries forward the current *Fifth Edition* energy conservation requirements with minor changes, including the requiring of thermostats on every story containing conditioned space - Note that Appendix J will change (See the front piece to Chapter 13 which is repeated as the front piece of Appendix J).

DESCRIPTION OF APPENDIX K

Appendix K, "Floor Protector Thermal Conductivity Calculations" is unique to Massachusetts and supplements the solid fuel-burning section of Chapter 36, Section 3610.

DESCRIPTION OF APPENDIX L

Appendix L, "Schedule of Fees" is unique to Massachusetts and defines initial and renewal licensing fees, initial and renewal Home Improvement Contractor registration fees and associated Guaranty Fund fees, Appeals Board fees, building permit fees, and existing building, periodic inspection fees.

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PART III - CROSS REFERENCE BY ARTICLE/CHAPTER

CAUTION

This cross-index is meant as a transition tool for users of the *Sixth Edition* of the Massachusetts State Building Code. It is not meant as an authoritative source for all changes either from the BOCA National Building Code or the *Fifth Edition* of the Massachusetts State Building Code. Always refer to the actual code documents for definitive requirements.

The Table in Part III has been developed for those who are accustomed to using the *Fifth Edition* and previous editions of the Massachusetts State Building Code. The first column lists article and primary section numbers in the *Fifth Edition*; the second column gives the article and section number in the *Sixth Edition*. The balance of the articles in the *Fourth Edition* have an equivalent article in the *Fifth Edition*.

<i>Fifth Edition</i> Table of Contents	<i>Sixth Edition</i> Article/Chapter Cross Reference
Article 1 - ADMINISTRATION AND ENFORCEMENT	Chapter 1 - ADMINISTRATION <i>(Substantial portions of chapter are entirely unique to Massachusetts)</i>
100.0 Scope	101.0 Scope
101.0 Applicability	102.0 Applicability
102.0 Ordinary repairs	110.3 Exemptions (Application for permit)
103.0 Installation of service repairs equipment	110.0 Permit Application
104.0 Maintenance	103.0 Maintenance
105.0 Change in existing use	102.5 Applicability to existing buildings 110.1 Permit application
106.0 Alterations and repairs	102.5 Applicability to existing buildings 110.1 Permit application
107.0 Building department	105.0 Office of the inspector of buildings or building commissioner
108.0 Duties and powers of the building official and state inspector	106.0 Duties and powers of the building official 107.0 Duties and powers of the state inspector
109.0 Rules and regulations	108.0 Rules and regulations
110.0 Approval	109.0 Approval
111.0 Inspection	115.0 Inspection
112.0 Right of entry	115.6 General (Inspection)
113.0 Application for permit	110.0 Application for permit
114.0 Permits	111.0 Permits
115.0 Conditions of permit	113.0 Conditions of permit
116.0 Demolition of structures	112.0 Demolition of structures
117.0 Moved structures	102.56 Moved Structures
118.0 Fees	114.0 Fees
119.0 Certificate of use and occupancy	120.0 Certificate of occupancy
120.0 Posting structures	120.5 Posting structures
121.0 Violations	118.0 Violations
122.0 Stop-work order	119.0 Stop-work order
123.0 Unsafe structures	121.0 Unsafe structures
124.0 Emergency measures	121.0 Unsafe structures
125.0 Reserved	
126.0 Board of Appeals	122.0 Board of Appeals
127.0 Construction Control	116.0 Registered architectural and professional engineering services-Construction Control
128.0 Construction Materials Safety Board	123.0 Construction Materials Safety Board
129.0 Activities requiring licenses	108.0 Rules and regulations

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131.0 Structural Peer Review Advisory Board	125.0 Structural Peer Review Advisory Committee
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Article 2 - DEFINITIONS AND CLASSIFICATIONS	Chapter 2 - DEFINITIONS <i>(Additional definitions are provided in appropriate chapters)</i>
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Article 3 - USE GROUP CLASSIFICATION	Chapter 3 - USE OR OCCUPANCY
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302.0 Use group A, assembly uses	303.0 Assembly use groups
303.0 Use group B, business uses	304.0 Business use groups
304.0 Use group E, educational uses	305.0 Educational use groups
305.0 Use group F, factory and industrial use	306.0 Factory and industrial use groups
306.0 Use group H, high hazard uses	307.0 High hazard use groups
307.0 Use group I, institutional uses	308.0 Institutional use groups
308.0 Use group M, mercantile uses	309.0 Mercantile use groups
309.0 Use group R, residential uses	310.0 Residential use groups
310.0 Use group S, storage uses	311.0 Storage use groups
311.0 Use group U, Utility and miscellaneous uses	312.0 Utility and miscellaneous use groups
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313.0 Mixed use and occupancy	313.0 Mixed use groups
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403.0 Type 2 construction	603.0 Type 2 construction
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405.0 Type 4 construction	605.0 Type 4 construction
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Article 5 - GENERAL BUILDING LIMITATIONS	Chapter 5 - GENERAL BUILDING LIMITATIONS
500.0 General	501.0 General 502.0 Definitions
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507.0 Permissible street projections	3203.0 Permissible street encroachments
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511.0 Temporary structures	3104.0 Temporary structures
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Article 6 - SPECIAL USE AND OCCUPANCY REQUIREMENTS	Chapter 4 - SPECIAL USE AND OCCUPANCY
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602.0 High-rise buildings	403.0 High rise buildings
603.0 HPM use facilities	416.0 HPM facilities
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605.0 Mezzanines	505.0 Mezzanines
606.0 Open wells	404.0 Atriums
607.0 Open parking garages	406.0 Open parking garage
608.0 Private garages	407.0 Private garages
609.0 Public garages	408.0 Public garages
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613.0 Motion picture projections rooms, screening rooms and sound stages	411.0 Motion picture projections rooms, screening rooms and sound stages
614.0 Rooftop heliports	1511.0 Rooftop heliports
615.0 Stages and Platforms	412.0 Stages and platforms
616.0 Airport traffic control towers	414.0 Airport traffic control towers
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632.0 Nursing homes...etc.	409.0 Use group I-2
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634.0 Summer camps for children	425.0 Summer Camps for Children
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636.0 Limited group residences	427.0 Limited group residences
637.0 Detoxification Facilities	428.0 Detoxification Facilities
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