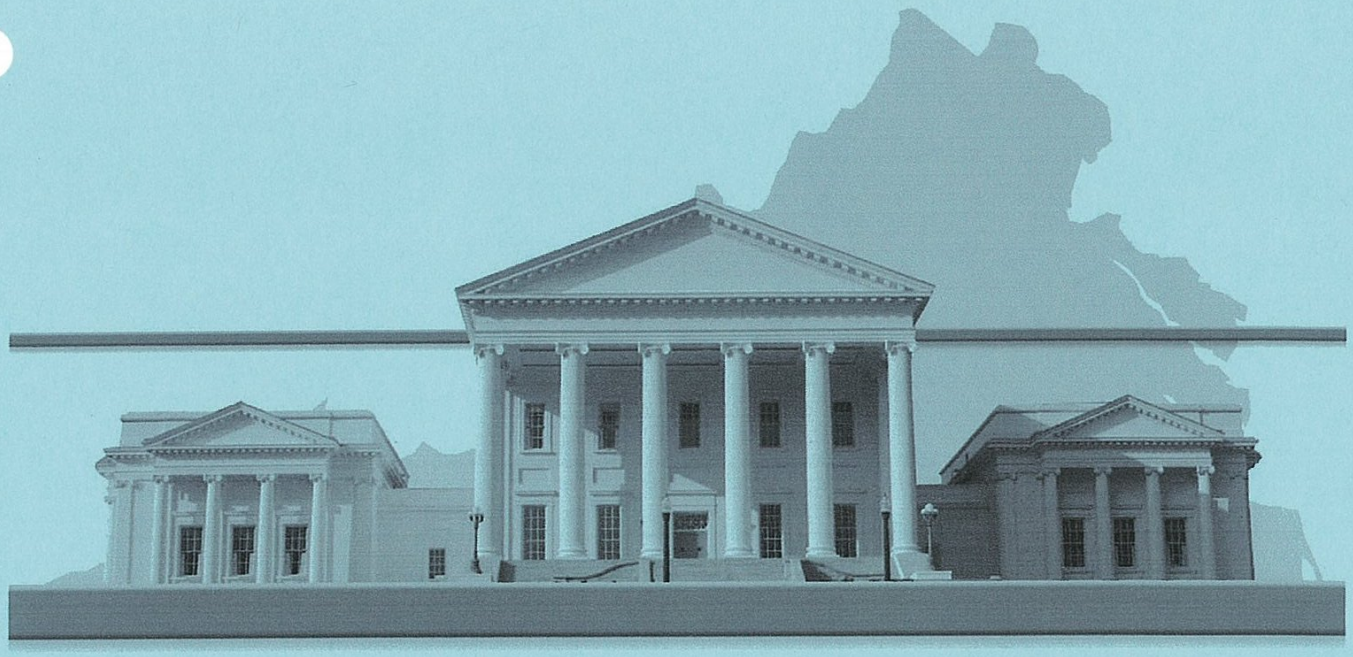

Virginia Construction Code

Part I of the Virginia Uniform Statewide Building Code

2009

Effective March 1, 2011

PREFACE

Introduction

The Virginia Uniform Statewide Building Code (USBC) is a state regulation promulgated by the Virginia Board of Housing and Community Development, a Governor-appointed board, for the purpose of establishing minimum regulations to govern the construction and maintenance of buildings and structures.

The provisions of the USBC are based on nationally recognized model building and fire codes published by the International Code Council, Inc.. The model codes are made part of the USBC through a regulatory process known as incorporation by reference. The USBC also contains administrative provisions governing the use of the model codes and establishing requirements for the enforcement of the code by the local building departments and other code enforcement agencies.

In keeping with the designations of the USBC used previously, since the 2009 editions of the International Codes are incorporated by reference into this version of the USBC, it is known as the 2009 edition of the USBC.

Arrangement

The USBC is part of the Virginia Administrative Code (VAC), the official compilation of state regulations published under the authority and guidance of the Virginia Code Commission. Due to the difference in the section numbering system between the VAC and the model codes incorporated by reference into the USBC, the UBSC utilizes a dual section numbering system. In the USBC, the VAC section numbers are listed first, followed by a section number matching the model code system. In this printing of the USBC, the VAC section numbers are omitted and only the model code numbering system is utilized. The version of the USBC containing both the VAC section numbers and the model code numbering is available from the Virginia Department of Housing and Community Development (DHCD) and may also be accessed through the website of the Virginia Code Commission or by subscription to the VAC.

Overview

The USBC is divided into three stand-alone parts. Part I contains regulations specific to the construction of new buildings and structures and alterations, additions and change of occupancy in existing buildings and structures and is known as the Virginia Construction Code. Part II contains optional regulations specific to the rehabilitation of existing buildings that may be used as an acceptable alternative to the Virginia Construction Code. Part II is known as the Virginia Rehabilitation Code. Part III of the USBC contains the regulations for the maintenance of existing structures which is enforced at the option of the local governments. It is known as the Virginia Maintenance Code.

Codes Purchased from ICC

The 2009 edition of the USBC is being made available in pamphlet form as in past editions of the USBC. In addition to the pamphlet form of the USBC published by DHCD, the International Code Council (ICC) publishes versions of the Virginia Construction Code, Virginia Rehabilitation Code, Virginia Maintenance Code and a series of Virginia specific trade codes. In the ICC published versions, marginal markings are provided to distinguish between text which is part of the International Codes and text which is part of the state regulations. Double vertical lines in the margins within the body of the codes indicate state amendments to the International Codes. As in the standard printings of the International Codes, a single vertical line in the margins within the body of the code indicates a technical change from the previous edition of the International Codes. Deletions from the previous editions of the International Codes are indicated in the form of an arrow (→) in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or a table has been deleted.

Technical Assistance

The local building departments and enforcing agencies may be contacted for further information concerning the USBC. Contact information for DHCD is below.

DHCD, Division of Building and Fire Regulation
Technical Assistance Services Office
600 East Main Street, Suite 300
Richmond, Virginia 23219-2430
Phone: (804) 371-7150 – Email: taso@dhcd.virginia.gov
Website: www.dhcd.virginia.gov

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CHAPTER 1
ADMINISTRATION

SECTION 101
GENERAL

101.1 Short title. The Virginia Uniform Statewide Building Code, Part I, Construction, may be cited as the Virginia Construction Code. The term "USBC" shall mean the Virginia Construction Code unless the context in which the term is used clearly indicates it to be an abbreviation for the entire Virginia Uniform Statewide Building Code or for a different part of the Virginia Uniform Statewide Building Code.

Note: This code is also known as the 2009 edition of the USBC due to the use of the 2009 editions of the model codes.

101.2 Incorporation by reference. Chapters 2–35 of the 2009 International Building Code, published by the International Code Council, Inc., are adopted and incorporated by reference to be an enforceable part of the USBC. The term "IBC" means the 2009 International Building Code, published by the International Code Council, Inc. Any codes and standards referenced in the IBC are also considered to be part of the incorporation by reference, except that such codes and standards are used only to the prescribed extent of each such reference. In addition, any provisions of the appendices of the IBC specifically identified to be part of the USBC are also considered to be part of the incorporation by reference.

Note 1: The IBC references the whole family of International Codes including the following major codes:

2009 International Plumbing Code
2009 International Mechanical Code
2008 NFPA 70
2009 International Fuel Gas Code
2009 International Energy Conservation Code
2009 International Residential Code

Note 2: The International Residential Code is applicable to the construction of detached one- and two-family dwellings and townhouses as set out in Section 310.

101.3 Numbering system. A dual numbering system is used in the USBC to correlate the numbering system of the Virginia Administrative Code with the numbering system of the IBC. IBC numbering system designations are provided in the catchlines of the Virginia Administrative Code sections. Cross references between sections or chapters of the USBC use only the IBC numbering system designations. The term "chapter" is used in the context of the numbering system of the IBC and may mean a chapter in the USBC, a chapter in the IBC or a chapter in a referenced code or standard, depending on the context of the use of the term. The term "chapter" is not used to designate a chapter of the Virginia Administrative Code, unless clearly indicated.

101.4 Arrangement of code provisions. The USBC is comprised of the combination of (i) the provisions of Chapter 1, Administration, which are established herein, (ii) Chapters 2–35 of the IBC, which are incorporated by reference in Section 101.2, and (iii) the changes to the text of the incorporated chapters of the IBC that are specifically identified. The terminology "changes to the text of the incorporated chapters of the IBC that are specifically identified" shall also be referred to as the "state amendments to the IBC." Such state amendments to the IBC are set out using corresponding chapter and section numbers of the IBC numbering system. In addition, since Chapter 1 of the IBC is not incorporated as part of the USBC, any reference to a provision of Chapter 1 of the IBC in the provisions of Chapters 2 - 35 of the IBC is generally invalid. However, where the purpose of such a reference would clearly correspond to a provision of Chapter 1 established herein, then the reference may be construed to be a valid reference to such corresponding Chapter 1 provision.

101.5 Use of terminology and notes. The term "this code," or "the code," where used in the provisions of Chapter 1, in Chapters 2–35 of the IBC or in the state amendments to the IBC means the USBC, unless the context clearly indicates otherwise. The term "this code" or "the code" where used in a code or standard referenced in the IBC means that code or standard, unless the context clearly indicates otherwise. The use of notes in Chapter 1 is to provide information only and shall not be construed as changing the meaning of any code provision. Notes in the IBC, in the codes and standards

referenced in the IBC and in the state amendments to the IBC may modify the content of a related provision and shall be considered to be a valid part of the provision, unless the context clearly indicates otherwise.

101.6 Order of precedence. The provisions of Chapter 1 of this code supersede any conflicting provisions of Chapters 2–35 of the IBC and any conflicting provisions of the codes and standards referenced in the IBC. In addition, the state amendments to the IBC supersede any conflicting provisions of Chapters 2–35 of the IBC and any conflicting provisions of the codes and standards referenced in the IBC. Further, the provisions of Chapters 2–35 of the IBC supersede any conflicting provisions of the codes and standards referenced in the IBC.

101.7 Administrative provisions. The provisions of Chapter 1 establish administrative requirements, which include but are not limited to provisions relating to the scope of the code, enforcement, fees, permits, inspections and disputes. Any provisions of Chapters 2–35 of the IBC or any provisions of the codes and standards referenced in the IBC that address the same subject matter and impose differing requirements are deleted and replaced by the provisions of Chapter 1. Further, any administrative requirements contained in the state amendments to the IBC shall be given the same precedence as the provisions of Chapter 1. Notwithstanding the above, where administrative requirements of Chapters 2–35 of the IBC or of the codes and standards referenced in the IBC are specifically identified as valid administrative requirements in Chapter 1 of this code or in the state amendments to the IBC, then such requirements are not deleted and replaced.

Note: The purpose of this provision is to eliminate overlap, conflicts and duplication by providing a single standard for administrative, procedural and enforcement requirements of this code.

101.8 Definitions. The definitions of terms used in this code are contained in Chapter 2 along with specific provisions addressing the use of definitions. Terms may be defined in other chapters or provisions of the code and such definitions are also valid.

Note: The order of precedence outlined in Section 101.6 may be determinative in establishing how to apply the definitions in the IBC and in the referenced codes and standards.

SECTION 102
PURPOSE AND SCOPE

102.1 Purpose. In accordance with Section 36-99 of the Code of Virginia, the purpose of the USBC is to protect the health, safety and welfare of the residents of the Commonwealth of Virginia, provided that buildings and structures should be permitted to be constructed at the least possible cost consistent with recognized standards of health, safety, energy conservation and water conservation, including provisions necessary to prevent overcrowding, rodent or insect infestation, and garbage accumulation; and barrier-free provisions for the physically handicapped and aged.

102.2 Scope. This section establishes the scope of the USBC in accordance with Section 36-98 of the Code of Virginia. The USBC shall supersede the building codes and regulations of the counties, municipalities and other political subdivisions and state agencies. This code also shall supersede the provisions of local ordinances applicable to single-family residential construction that (i) regulate dwelling foundations or crawl spaces, (ii) require the use of specific building materials or finishes in construction, or (iii) require minimum surface area or numbers of windows; however, this code shall not supersede proffered conditions accepted as a part of a rezoning application, conditions imposed upon the grant of special exceptions, special or conditional use permits or variances, conditions imposed upon a clustering of single-family homes and preservation of open space development through standards, conditions, and criteria established by a locality pursuant to subdivision 8 of Section 15.2-2242 of the Code of Virginia or subdivision A 12 of Section 15.2-2286 of the Code of Virginia, or land use requirements in airport or highway overlay districts, or historic districts created pursuant to Section 15.2-2306 of the Code of Virginia, or local flood plain regulations adopted as a condition of participation in the National Flood Insurance Program.

Note: Requirements relating to functional design are contained in Section 103.11 of this code.

102.2.1 Invalidity of provisions. To the extent that any provisions of this code are in conflict with Chapter 6 (Section 36-97 et seq.) of Title 36 of the Code of Virginia or in conflict with the scope of the USBC, those provisions are considered to be invalid to the extent of such conflict.

102.3 Exemptions. The following are exempt from this code:

1. Equipment, related wiring, and poles and towers supporting the related wiring installed by a provider of publicly regulated utility service or a franchised cable television operator and electrical equipment and related wiring used for radio, broadcast or cable television, telecommunications or information service transmission. The exemption shall apply only if under applicable federal and state law the ownership and control of the equipment and wiring is by the service provider or its affiliates. Such exempt equipment and wiring shall be located on either rights-of-way or property for which the service provider has rights of occupancy and entry; however, the structures, including their service equipment, housing or supporting such exempt equipment and wiring shall be subject to the USBC. The installation of equipment and wiring exempted by this section shall not create an unsafe condition prohibited by the USBC.

2. Manufacturing and processing machines that do not produce or process hazardous materials regulated by this code, including all of the following service equipment associated with the manufacturing or processing machines.

   2.1. Electrical equipment connected after the last disconnecting means.

   2.2. Plumbing piping and equipment connected after the last shutoff valve or backflow device and before the equipment drain trap.

   2.3. Gas piping and equipment connected after the outlet shutoff valve.

   Manufacturing and processing machines that produce or process hazardous materials regulated by this code are only required to comply with the code provisions regulating the hazardous materials.

3. Parking lots and sidewalks, which are not part of an accessible route.

4. Nonmechanized playground or recreational equipment such as swing sets, sliding boards, climbing bars, jungle gyms, skateboard ramps, and similar equipment where no admission fee is charged for its use or for admittance to areas where the equipment is located.

5. Industrialized buildings subject to the Virginia Industrialized Building Safety Regulations (13 VAC 5-91) and manufactured homes subject to the Virginia Manufactured Home Safety Regulations (13 VAC 5-95); except as provided for in Section 424.

6. Farm buildings and structures, except for a building or a portion of a building located on a farm that is operated as a restaurant as defined in Section 35.1-1 of the Code of Virginia and licensed as such by the Virginia Board of Health pursuant to Chapter 2 (Section 35.1-11 et seq.) of Title 35.1 of the Code of Virginia. However, farm buildings and structures lying within a flood plain or in a mudslide-prone area shall be subject to flood-proofing regulations or mudslide regulations, as applicable.

7. Federally owned buildings and structures unless federal law specifically requires a permit from the locality. Underground storage tank installations, modifications and removals shall comply with this code in accordance with federal law.

SECTION 103
APPLICATION OF CODE

103.1 General. In accordance with Section 36-99 of the Code of Virginia, the USBC shall prescribe building regulations to be complied with in the construction and rehabilitation of buildings and structures, and the equipment therein.

103.2 When applicable to new construction. Construction for which a permit application is submitted to the local building department after the effective date of the 2009 edition of the code shall comply with the provisions of this code, except for permit applications submitted during a one-year period after the effective date of the 2009 edition of the code. The applicant for a permit during such one-year period shall be permitted to choose whether to comply with the provisions of this code or the provisions of the edition of the code in effect immediately prior to the 2009 edition. This provision shall also apply to subsequent amendments to this code based on the effective date of such amendments. In addition, when a permit has been properly issued under a previous edition of this code, this code shall not require changes to the approved construction documents, design or construction of such a building or structure, provided the permit has not been suspended or revoked.

103.3 Change of occupancy. No change of occupancy shall be made in any structure when the current USBC requires a greater degree of accessibility, structural strength, fire protection, means of egress, ventilation or sanitation. When such a greater degree is required, the owner or the owner's agent shall make written application to the local building department for a new certificate of occupancy and shall obtain the new certificate of occupancy prior to the new use of the structure. When impractical to achieve compliance with this code for the new occupancy classification, the building official shall consider modifications upon application and as provided for in Section 106.3.

Exception: This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

103.4 Additions. Additions to buildings and structures shall comply with the requirements of this code for new construction and an existing building or structure plus additions shall comply with the height and area provisions of Chapter 5. Further, this code shall not require changes to the design or construction of any portions of the building or structure not altered or affected by an addition, unless the addition has the effect of lowering the current level of safety.

Exception: This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

103.5 Reconstruction, alteration or repair. The following criteria is applicable to reconstruction, alteration or repair of buildings or structures:

1. Any reconstruction, alteration or repair shall not adversely affect the performance of the building or structure, or cause the building or structure to become unsafe or lower existing levels of health and safety.

2. Parts of the building or structure not being reconstructed, altered or repaired shall not be required to comply with the requirements of this code applicable to newly constructed buildings or structures.

3. The installation of material or equipment, or both, that is neither required nor prohibited shall only be required to comply with the provisions of this code relating to the safe installation of such material or equipment.

4. Material or equipment, or both, may be replaced in the same location with material or equipment of a similar kind or capacity.

Exceptions:

1. This section shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

2. Reconstructed decks, balconies, porches and similar structures located 30 inches (762 mm) or more above grade shall meet the current code provisions for structural loading capacity, connections and structural attachment. This requirement excludes the configuration and height of handrails and guardrails.

103.6 Use of rehabilitation code. Compliance with Part II of the Virginia Uniform Statewide Building Code, also known as the "Virginia Rehabilitation Code," shall be an acceptable alternative to compliance with this code for the rehabilitation of such existing buildings and structures within the scope of that code. For the purposes of this section, the term "rehabilitation" shall be as defined in the Virginia Rehabilitation Code.

103.7 Retrofit requirements. The local building department shall enforce the provisions of Section 3413, which require certain existing buildings to be retrofitted with fire protection systems and other safety equipment. Retroactive fire protection system requirements contained in the International Fire Code shall not be applicable unless required for compliance with the provisions of Section 3413.

103.8 Nonrequired equipment. The following criteria for nonrequired equipment is in accordance with Section 36-103 of the Code of Virginia. Building owners may elect to install partial or full fire alarms or other safety equipment that was not required by the edition of the USBC in effect at the time a building was constructed without meeting current requirements of the code, provided the installation does not create a hazardous condition. Permits for installation shall be obtained in

accordance with this code. In addition, as a requirement of this code, when such nonrequired equipment is to be installed, the building official shall notify the appropriate fire official or fire chief.

103.8.1 Reduction in function or discontinuance of nonrequired fire protection systems. When a nonrequired fire protection system is to be reduced in function or discontinued, it shall be done in such a manner so as not to create a false sense of protection. Generally, in such cases, any features visible from interior areas shall be removed, such as sprinkler heads, smoke detectors or alarm panels or devices, but any wiring or piping hidden within the construction of the building may remain. Approval of the proposed method of reduction or discontinuance shall be obtained from the building official.

103.9 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection or inspections shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with either the International Residential Code, the International Mechanical Code or the International Fuel Gas Code, depending on which is applicable based on the fuel source and the occupancy classification of the structure.

2. Vent or chimney systems are clean, free of any obstruction or blockages, defects or deterioration and are in operable condition.

Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

103.10 Use of certain provisions of referenced codes. The following provisions of the IBC and of other indicated codes or standards are to be considered valid provisions of this code. Where any such provisions have been modified by the state amendments to the IBC, then the modified provisions apply.

1. Special inspection requirements in Chapters 2–35.

2. Chapter 34, Existing Structures, except that Section 3412, Compliance Alternatives, shall not be used to comply with the retrofit requirements identified in Section 103.7 and shall not be construed to permit noncompliance with any applicable flood load or flood-resistant construction requirements of this code.

3. Testing requirements and requirements for the submittal of construction documents in any of the ICC codes referenced in Chapter 35 and in the IRC.

4. Section R301.2 of the International Residential Code authorizing localities to determine climatic and geographic design criteria.

5. Flood load or flood-resistant construction requirements in the IBC or the International Residential Code, including, but not limited to, any such provisions pertaining to flood elevation certificates that are located in Chapter 1 of those codes. Any required flood elevation certificate pursuant to such provisions shall be prepared by a land surveyor licensed in Virginia or an RDP.

6. Section R101.2 of the IRC.

103.11 Functional design. The following criteria for functional design is in accordance with Section 36-98 of the Code of Virginia. The USBC shall not supersede the regulations of other state agencies that require and govern the functional design and operation of building related activities not covered by the USBC, including but not limited to (i) public water supply systems, (ii) waste water treatment and disposal systems, (iii) solid waste facilities, nor shall state agencies be prohibited from requiring, pursuant to other state law, that buildings and equipment be maintained in accordance with provisions of this code. In addition, as established by this code, the building official may refuse to issue a permit until the applicant has supplied certificates of functional design approval from the appropriate state agency or agencies. For purposes of coordination, the locality may require reports to the building official by other departments or agencies indicating compliance with their regulations applicable to the functional design of a building or structure as a condition for issuance of a building permit or certificate of occupancy. Such reports shall be based upon review of the plans or inspection of the

project as determined by the locality. All enforcement of these conditions shall not be the responsibility of the building official, but rather the agency imposing the condition.

Note: Identified state agencies with functional design approval are listed in the "Related Laws Package," which is available from DHCD.

103.12 Amusement devices and inspections. In accordance with Section 36-98.3 of the Code of Virginia, to the extent they are not superseded by the provisions of Section 36-98.3 of the Code of Virginia and the VADR, the provisions of the USBC shall apply to amusement devices. In addition, as a requirement of this code, inspections for compliance with the VADR shall be conducted either by local building department personnel or private inspectors provided such persons are certified as amusement device inspectors under the VCS.

103.13 State buildings and structures. This section establishes the application of the USBC to state-owned buildings and structures in accordance with Section 36-98.1 of the Code of Virginia. The USBC shall be applicable to all state-owned buildings and structures, with the exception that Sections 2.2-1159, 2.2-1160 and 2.2-1161 of the Code of Virginia shall provide the standards for ready access to and use of state-owned buildings by the physically handicapped.

Any state-owned building or structure for which preliminary plans were prepared or on which construction commenced after the initial effective date of the USBC, shall remain subject to the provisions of the USBC that were in effect at the time such plans were completed or such construction commenced. Subsequent reconstruction, renovation or demolition of such building or structure shall be subject to the pertinent provisions of this code.

Acting through the Division of Engineering and Buildings, the Virginia Department of General Services shall function as the building official for state-owned buildings. The department shall review and approve plans and specifications, grant modifications, and establish such rules and regulations as may be necessary to implement this section. It shall provide for the inspection of state-owned buildings and enforcement of the USBC and standards for access by the physically handicapped by delegating inspection and USBC enforcement duties to the State Fire Marshal's Office, to other appropriate state agencies having needed expertise, and to local building departments, all of which shall provide such assistance within a reasonable time and in the manner requested. State agencies and institutions occupying buildings shall pay to the local building department the same fees as would be paid by a private citizen for the services rendered when such services are requested by the department. The department may alter or overrule any decision of the local building department after having first considered the local building department's report or other rationale given for its decision. When altering or overruling any decision of a local building department, the department shall provide the local building department with a written summary of its reasons for doing so.

Notwithstanding any provision of this code to the contrary, roadway tunnels and bridges owned by the Virginia Department of Transportation shall be exempt from this code. The Virginia Department of General Services shall not have jurisdiction over such roadway tunnels, bridges and other limited access highways; provided, however, that the Department of General Services shall have jurisdiction over any occupied buildings within any Department of Transportation rights-of-way that are subject to this code.

Except as provided in Section 23-38.109 D of the Code of Virginia, and notwithstanding any provision of this code to the contrary, at the request of a public institution of higher education, the Virginia Department of General Services, as further set forth in this provision, shall authorize that institution of higher education to contract with a building official of the locality in which the construction is taking place to perform any inspection and certifications required for the purpose of complying with this code. The department shall publish administrative procedures that shall be followed in contracting with a building official of the locality. The authority granted to a public institution of higher education under this provision to contract with a building official of the locality shall be subject to the institution meeting the conditions prescribed in Section 23-38.88 B of the Code of Virginia.

Note: In accordance with Section 36-98.1 of the Code of Virginia, roadway tunnels and bridges shall be designed, constructed and operated to comply with fire safety standards based on nationally recognized model codes and standards to be developed by the Virginia Department of Transportation in consultation with the State Fire Marshal and approved by the Virginia Commonwealth Transportation Board. Emergency response planning and activities related to the standards approved by the Commonwealth Transportation Board shall be developed by the Department of Transportation and coordinated with the appropriate local officials and emergency service providers. On an annual basis, the Department of Transportation shall provide a report on the maintenance and operability of installed fire protection and detection systems in roadway tunnels and bridges to the State Fire Marshal.

103.13.1 Certification of state enforcement personnel. State enforcement personnel shall comply with the applicable requirements of Section 105 for certification, periodic maintenance training, and continuing education.

SECTION 104
ENFORCEMENT, GENERALLY

104.1 Scope of enforcement. This section establishes the requirements for enforcement of the USBC in accordance with Section 36-105 of the Code of Virginia. Enforcement of the provisions of the USBC for construction and rehabilitation shall be the responsibility of the local building department. Whenever a county or municipality does not have such a building department, the local governing body shall enter into an agreement with the local governing body of another county or municipality or with some other agency, or a state agency approved by DHCD for such enforcement. For the purposes of this section, towns with a population of less than 3,500 may elect to administer and enforce the USBC; however, where the town does not elect to administer and enforce the code, the county in which the town is situated shall administer and enforce the code for the town. In the event such town is situated in two or more counties, those counties shall administer and enforce the USBC for that portion of the town situated within their respective boundaries.

Upon a finding by the local building department, following a complaint by a tenant of a residential rental unit that is the subject of such complaint, that there may be a violation of the unsafe structures provisions of Part III of the Virginia Uniform Statewide Building Code, also known as the "Virginia Maintenance Code," the local building department shall enforce such provisions.

If the local building department receives a complaint that a violation of the Virginia Maintenance Code exists that is an immediate and imminent threat to the health or safety of the owner or tenant of a residential dwelling unit or a nearby residential dwelling unit, and the owner or tenant of the residential dwelling unit that is the subject of the complaint has refused to allow the local building official or his agent to have access to the subject dwelling, the local building official or his agent may present sworn testimony to a court of competent jurisdiction and request that the court grant the local building official or his agent an inspection warrant to enable the building official or his agent to enter the subject dwelling for the purpose of determining whether violations of the Virginia Maintenance Code exist. The local building official or his agent shall make a reasonable effort to obtain consent from the owner or tenant of the subject dwelling prior to seeking the issuance of an inspection warrant under this section.

The local governing body shall inspect and enforce the provisions of the Virginia Maintenance Code for elevators except for elevators in single and two-family homes and townhouses. Such inspection and enforcement shall be carried out by an agency or department designated by the local governing body.

104.2 Interagency coordination. When any inspection functions under this code are assigned to a local agency other than the local building department, such agency shall coordinate its reports of inspection with the local building department.

104.3 Transfer of ownership. If the local building department has initiated an enforcement action against the owner of a building or structure and such owner subsequently transfers the ownership of the building or structure to an entity in which the owner holds an ownership interest greater than 50%, the pending enforcement action shall continue to be enforced against the owner.

SECTION 105
LOCAL BUILDING DEPARTMENT

105.1 Appointment of building official. Every local building department shall have a building official as the executive official in charge of the department. The building official shall be appointed in a manner selected by the local governing body. After permanent appointment, the building official shall not be removed from office except for cause after having been afforded a full opportunity to be heard on specific and relevant charges by and before the appointing authority. DHCD shall be notified by the appointing authority within 30 days of the appointment or release of a permanent or acting building official.

Note: Building officials are subject to sanctions in accordance with the VCS.

105.1.1 Qualifications of building official. The building official shall have at least five years of building experience as a licensed professional engineer or architect, building, fire or trade inspector, contractor, housing inspector or

superintendent of building, fire or trade construction or at least five years of building experience after obtaining a degree in architecture or engineering, with at least three years in responsible charge of work. Any combination of education and experience that would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. The building official shall have general knowledge of sound engineering practice in respect to the design and construction of structures, the basic principles of fire prevention, the accepted requirements for means of egress and the installation of elevators and other service equipment necessary for the health, safety and general welfare of the occupants and the public. The local governing body may establish additional qualification requirements.

105.1.2 Certification of building official. An acting or permanent building official shall be certified as a building official in accordance with the VCS within one year after being appointed as acting or permanent building official.

Exception: A building official in place prior to April 1, 1983, shall not be required to meet the certification requirements in this section while continuing to serve in the same capacity in the same locality.

105.1.3 Noncertified building official. Except for a building official exempt from certification under the exception to Section 105.1.2, any acting or permanent building official who is not certified as a building official in accordance with the VCS shall attend the core module of the Virginia Building Code Academy or an equivalent course in an individual or regional code academy accredited by DHCD within 180 days of appointment. This requirement is in addition to meeting the certification requirement in Section 105.1.2.

105.1.4 Requirements for periodic maintenance and continuing education. Building officials shall attend periodic maintenance training as designated by DHCD. In addition to the periodic maintenance training required above, building officials shall attend 16 hours of continuing education every two years as approved by DHCD. If a building official possesses more than one BHCD certificate, the 16 hours shall satisfy the continuing education requirement for all BHCD certificates.

105.2 Technical assistants. The building official, subject to any limitations imposed by the locality, shall be permitted to utilize technical assistants to assist the building official in the enforcement of the USBC. DHCD shall be notified by the building official within 60 days of the employment of, contracting with or termination of all technical assistants.

Note: Technical assistants are subject to sanctions in accordance with the VCS.

105.2.1 Qualifications of technical assistants. A technical assistant shall have at least three years of experience and general knowledge in at least one of the following areas: building construction; building, fire or housing inspections; plumbing, electrical or mechanical trades; or fire protection, elevator or property maintenance work. Any combination of education and experience that would confer equivalent knowledge and ability shall be deemed to satisfy this requirement. The locality may establish additional qualification requirements.

105.2.2 Certification of technical assistants. A technical assistant shall be certified in the appropriate subject area within 18 months after becoming a technical assistant. When required by local policy to have two or more certifications, a technical assistant shall obtain the additional certifications within three years from the date of such requirement.

Exception: A technical assistant in place prior to March 1, 1988, shall not be required to meet the certification requirements in this section while continuing to serve in the same capacity in the same locality.

105.2.3 Requirements for periodic maintenance and continuing education. Technical assistants shall attend periodic maintenance training as designated by DHCD. In addition to the periodic maintenance training required above, technical assistants shall attend 16 hours of continuing education every two years as approved by DHCD. If a technical assistant possesses more than one BHCD certificate, the 16 hours shall satisfy the continuing education requirement for all BHCD certificates.

105.3 Conflict of interest. The standards of conduct for building officials and technical assistants shall be in accordance with the provisions of the State and Local Government Conflict of Interests Act, Chapter 31 (Section 2.2-3100 et seq.) of Title 2.2 of the Code of Virginia.

105.4 Records. The local building department shall retain a record of applications received, permits, certificates, notices and orders issued, fees collected and reports of inspection in accordance with The Library of Virginia's General Schedule Number Six.

SECTION 106
POWERS AND DUTIES OF THE BUILDING OFFICIAL

106.1 Powers and duties, generally. The building official shall enforce this code as set out herein and as interpreted by the State Review Board.

106.2 Delegation of authority. The building official may delegate powers and duties except where such authority is limited by the local government. However, such limitations of authority by the local government are not applicable to the third-party inspector policy required by Section 113.7.1 nor shall such limitations of authority by the local government have the effect of altering the provisions of this code or creating building regulations. When such delegations are made, the building official shall be responsible for assuring that they are carried out in accordance with the provisions of this code.

106.3 Issuance of modifications. Upon written application by an owner or an owner's agent, the building official may approve a modification of any provision of the USBC provided the spirit and functional intent of the code are observed and public health, welfare and safety are assured. The decision of the building official concerning a modification shall be made in writing and the application for a modification and the decision of the building official concerning such modification shall be retained in the permanent records of the local building department.

Note: The USBC references nationally recognized model codes and standards. Future amendments to such codes and standards are not automatically included in the USBC; however the building official should give them due consideration in deciding whether to approve a modification.

106.3.1 Substantiation of modification. The building official may require or may consider a statement from an RDP or other person competent in the subject area of the application as to the equivalency of the proposed modification. In addition, the building official may require the application to include construction documents sealed by an RDP.

106.3.2 Use of performance code. Compliance with the provisions of a nationally recognized performance code when approved as a modification shall be considered to constitute compliance with this code. All documents submitted as part of such consideration shall be retained in the permanent records of the local building department.

SECTION 107
FEES

107.1 Authority for charging fees. In accordance with Section 36-105 of the Code of Virginia, fees may be levied by the local governing body in order to defray the cost of enforcement of the USBC.

107.1.1 Fee schedule. The local governing body shall establish a fee schedule incorporating unit rates, which may be based on square footage, cubic footage, estimated cost of construction or other appropriate criteria. A permit or any amendments to an existing permit shall not be issued until the designated fees have been paid, except that the building official may authorize the delayed payment of fees.

107.1.2 Refunds. When requested in writing by a permit holder, the locality shall provide a fee refund in the case of the revocation of a permit or the abandonment or discontinuance of a building project. The refund shall not be required to exceed an amount which correlates to work not completed.

107.2 Code academy fee levy. In accordance with subdivision 7 of Section 36-137 of the Code of Virginia, the local building department shall collect a 2.0% levy of fees charged for permits issued under this code and transmit it quarterly to DHCD to support training programs of the Virginia Building Code Academy. Localities that maintain individual or regional training academies accredited by DHCD shall retain such levy.

SECTION 108
APPLICATION FOR PERMIT

108.1 When applications are required. Application for a permit shall be made to the building official and a permit shall be obtained prior to the commencement of any of the following activities, except that applications for emergency construction, alterations or equipment replacement shall be submitted by the end of the first working day that follows the day such work commences. In addition, the building official may authorize work to commence pending the receipt of an application or the issuance of a permit.

1. Construction or demolition of a building or structure. Installations or alterations involving (i) the removal or addition of any wall, partition or portion thereof, (ii) any structural component, (iii) the repair or replacement of any required component of a fire or smoke rated assembly, (iv) the alteration of any required means of egress system, (v) water supply and distribution system, sanitary drainage system or vent system, (vi) electric wiring, (vii) fire protection system, mechanical systems, or fuel supply systems, or (viii) any equipment regulated by the USBC.

2. For change of occupancy, application for a permit shall be made when a new certificate of occupancy is required under Section 103.3.

3. Movement of a lot line that increases the hazard to or decreases the level of safety of an existing building or structure in comparison to the building code under which such building or structure was constructed.

4. Removal or disturbing of any asbestos containing materials during the construction or demolition of a building or structure, including additions.

108.2 Exemptions from application for permit. Notwithstanding the requirements of Section 108.1, application for a permit and any related inspections shall not be required for the following; however, this section shall not be construed to exempt such activities from other applicable requirements of this code. In addition, when an owner or an owner's agent requests that a permit be issued for any of the following, then a permit shall be issued and any related inspections shall be required.

1. Installation of wiring and equipment that (i) operates at less than 50 volts, (ii) is for network powered broadband communications systems, or (iii) is exempt under Section 102.3(1), except when any such installations are located in a plenum, penetrate fire rated or smoke protected construction or are a component of any of the following:

   1.1. Fire alarm system.

   1.2. Fire detection system.

   1.3. Fire suppression system.

   1.4. Smoke control system.

   1.5. Fire protection supervisory system.

   1.6. Elevator fire safety control system.

   1.7. Access or egress control system or delayed egress locking or latching system.

   1.8. Fire damper.

   1.9. Door control system.

2. One story detached accessory structures used as tool and storage sheds, playhouses or similar uses, provided the floor area does not exceed 200 square feet (18 m^2) and the structures are not classified as a Group F-1 or H occupancy.

3. Detached prefabricated buildings housing the equipment of a publicly regulated utility service, provided the floor area does not exceed 150 square feet (14 m^2).

4. Tents or air-supported structures, or both, that cover an area of 900 square feet (84 m^2) or less, including within that area all connecting areas or spaces with a common means of egress or entrance, provided such tents or structures have an occupant load of 50 or less persons.

5. Fences and privacy walls not part of a building, structure or of the barrier for a swimming pool, provided such fences and privacy walls do not exceed six feet in height above the finished grade. Ornamental post caps shall not be considered to contribute to the height of the fence or privacy wall and shall be permitted to extend above the six feet height measurement.

6. Retaining walls supporting less than two feet of unbalanced fill. This exemption shall not apply to any wall impounding Class I, II or III-A liquids or supporting a surcharge other than ordinary unbalanced fill.

7. Swimming pools that have a surface area not greater than 150 square feet (13.95 m^2), do not exceed 5,000 gallons (19 000 L) and are less than 24 inches (610 mm) deep.

8. Signs under the conditions in Section H101.2 of Appendix H.

9. Replacement of above-ground existing LP-gas containers of the same capacity in the same location and associated regulators when installed by the serving gas supplier.

10. Ordinary repairs that include the following:

    10.1. Replacement of windows and doors with windows and doors of similar operation and opening dimensions that do not require changes to the existing framed opening and that are not required to be fire rated in Group R-2 where serving a single dwelling unit and in Groups R-3, R-4 and R-5.

    10.2. Replacement of plumbing fixtures in all groups without alteration of the water supply and distribution systems, sanitary drainage systems or vent systems.

    10.3. Replacement of general use snap switches, dimmer and control switches, 125 volt-15 or 20 ampere receptacles, luminaries (lighting fixtures) and ceiling (paddle) fans in Group R-2 where serving a single dwelling unit and in Groups R-3, R-4 and R-5.

    10.4. Replacement of mechanical appliances provided such equipment is not fueled by gas or oil in Group R-2 where serving a single family dwelling and in Groups R-3, R-4 and R-5.

    10.5. Replacement of an unlimited amount of roof covering or siding in Groups R-3, R-4 or R-5 provided the building or structure is not in an area where the design (3 second gust) wind speed is greater than 100 miles per hour (160 km/hr) and replacement of 100 square feet (9.29 m^2) or less of roof covering in all groups and all wind zones.

    10.6. Replacement of 100 square feet (9.29 m^2) or less of roof decking in Groups R-3, R-4 or R-5 unless the decking to be replaced was required at the time or original construction to be fire-retardant-treated or protected in some other way to form a fire-rated wall termination.

    10.7. Installation or replacement of floor finishes in all occupancies.

    10.8. Replacement of Class C interior wall or ceiling finishes installed in Groups A, E and I and replacement of all classes of interior wall or ceiling finishes in other groups.

    10.9. Installation of replacement cabinetry or trim.

    10.10. Application of paint or wallpaper.

    10.11. Other repair work deemed by the building official to be minor and ordinary which does not adversely affect public health or general safety.

Exception: Application for a permit may be required by the building official for the installation of replacement siding, roofing and windows in buildings within a historic district designated by a locality pursuant to Section 15.2-2306 of the Code of Virginia.

108.3 Applicant information, processing by mail. Application for a permit shall be made by the owner or lessee of the relevant property or the agent of either or by the RDP, contractor or subcontractor associated with the work or any of their agents. The full name and address of the owner, lessee and applicant shall be provided in the application. If the owner or lessee is a corporate body, when and to the extent determined necessary by the building official, the full name and address of the responsible officers shall also be provided.

A permit application may be submitted by mail and such permit applications shall be processed by mail, unless the permit applicant voluntarily chooses otherwise. In no case shall an applicant be required to appear in person.

The building official may accept applications for a permit through electronic submissions provided the information required by this section is obtained.

108.4 Prerequisites to obtaining permit. In accordance with Section 54.1-1111 of the Code of Virginia, any person applying to the building department for the construction, removal or improvement of any structure shall furnish prior to the issuance of the permit either (i) satisfactory proof to the building official that he is duly licensed or certified under the terms or Chapter 11 (Section 54.1-1000 et seq.) of Title 54.1 of the Code of Virginia to carry out or superintend the same or (ii) file a written statement, supported by an affidavit, that he is not subject to licensure or certification as a contractor or subcontractor pursuant to Chapter 11 of Title 54.1 of the Code of Virginia. The applicant shall also furnish satisfactory proof that the taxes or license fees required by any county, city, or town have been paid so as to be qualified to bid upon or contract for the work for which the permit has been applied.

108.5 Mechanics' lien agent designation. In accordance with Section 36-98.01 of the Code of Virginia, a building permit issued for any one- or two-family residential dwelling shall at the time of issuance contain, at the request of the applicant, the name, mailing address, and telephone number of the mechanics' lien agent as defined in Section 43-1 of the Code of Virginia. If the designation of a mechanics' lien agent is not so requested by the applicant, the building permit shall at the time of issuance state that none has been designated with the words "None Designated."

Note: In accordance with Section 43-4.01A of the Code of Virginia, a permit may be amended after it has been initially issued to name a mechanics' lien agent or a new mechanics' lien agent.

108.6 Application form, description of work. The application for a permit shall be submitted on a form or forms supplied by the local building department. The application shall contain a general description and location of the proposed work and such other information as determined necessary by the building official.

108.7 Amendments to application. An application for a permit may be amended at any time prior to the completion of the work governed by the permit. Additional construction documents or other records may also be submitted in a like manner. All such submittals shall have the same effect as if filed with the original application for a permit and shall be retained in a like manner as the original filings.

108.8 Time limitation of application. An application for a permit for any proposed work shall be deemed to have been abandoned six months after the date of filing unless such application has been pursued in good faith or a permit has been issued, except that the building official is authorized to grant one or more extensions of time if a justifiable cause is demonstrated.

SECTION 109
CONSTRUCTION DOCUMENTS

109.1 Submittal of documents. Construction documents shall be submitted with the application for a permit. The number of sets of such documents to be submitted shall be determined by the locality. Construction documents for one- and two-family dwellings may have floor plans reversed provided an accompanying site plan is approved.

Exception: Construction documents do not need to be submitted when the building official determines the proposed work is of a minor nature.

Note: Information on the types of construction required to be designed by an RDP is included in the "Related Laws Package" available from DHCD.

109.2 Site plan. When determined necessary by the building official, a site plan shall be submitted with the application for a permit. The site plan shall show to scale the size and location of all proposed construction, including any associated wells, septic tanks or drain fields. The site plan shall also show to scale the size and location of all existing structures on the site, the distances from lot lines to all proposed construction, the established street grades and the proposed finished grades. When determined necessary by the building official, the site plan shall contain the elevation of the lowest floor of any proposed buildings. The site plan shall also be drawn in accordance with an accurate boundary line survey. When the application for a permit is for demolition, the site plan shall show all construction to be demolished and the location and size of all existing structures that are to remain on the site.

Note: Site plans are generally not necessary for alterations, renovations, repairs or the installation of equipment.

109.3 Engineering details. When determined necessary by the building official, construction documents shall include adequate detail of the structural, mechanical, plumbing or electrical components. Adequate detail may include computations, stress diagrams or other essential technical data and when proposed buildings are more than two stories in height, adequate detail may specifically be required to include where floor penetrations will be made for pipes, wires, conduits, and other components of the electrical, mechanical and plumbing systems and how such floor penetrations will be protected to maintain the required structural integrity or fire-resistance rating, or both. All engineered documents, including relevant computations, shall be sealed by the RDP responsible for the design.

109.4 Examination of documents. The building official shall examine or cause to be examined all construction documents or site plans, or both, within a reasonable time after filing. If such documents or plans do not comply with the provisions of this code, the permit applicant shall be notified in writing of the reasons, which shall include any adverse construction document review comments or determinations that additional information or engineering details need to be submitted. The review of construction documents for new one- and two-family dwellings for determining compliance with the technical provisions of this code not relating to the site, location or soil conditions associated with the dwellings shall not be required when identical construction documents for identical dwellings have been previously approved in the same locality under the same edition of the code and such construction documents are on file with the local building department.

109.4.1 Expedited construction document review. The building official may accept reports from an approved person or agency that the construction documents have been examined and conform to the requirements of the USBC and may establish requirements for the person or agency submitting such reports. In addition, where such reports have been submitted, the building official may expedite the issuance of the permit.

109.5 Approval of construction documents. The approval of construction documents shall be limited to only those items within the scope of the USBC. Either the word "Approved" shall be stamped on all required sets of approved construction documents or an equivalent endorsement in writing shall be provided. One set of the approved construction documents shall be retained for the records of the local building department and one set shall be kept at the building site and shall be available to the building official at all reasonable times.

109.6 Phased approval. The building official is authorized to issue a permit for the construction of foundations or any other part of a building or structure before the construction documents for the whole building or structure have been submitted, provided that adequate information and detailed statements have been filed complying with pertinent requirements of this code. The holder of such permit for the foundation or other parts of a building or structure shall proceed at the holder's own risk with the building operation and without assurance that a permit for the entire structure will be granted.

SECTION 110
PERMITS

110.1 Approval and issuance of permits. The building official shall examine or cause to be examined all applications for permits or amendments to such applications within a reasonable time after filing. If the applications or amendments do not comply with the provisions of this code or all pertinent laws and ordinances, the permit shall not be issued and the permit applicant shall be notified in writing of the reasons for not issuing the permit. If the application complies with the applicable requirements of this code, a permit shall be issued as soon as practicable. The issuance of permits shall not be delayed in an effort to control the pace of construction of new detached one- or two-family dwellings.

110.2 Types of permits. Separate or combined permits may be required for different areas of construction such as building construction, plumbing, electrical, and mechanical work, or for special construction as determined appropriate by the locality. In addition, permits for two or more buildings or structures on the same lot may be combined. Annual permits may also be issued for any construction regulated by this code. The annual permit holder shall maintain a detailed record of all alterations made under the annual permit. Such record shall be available to the building official and shall be submitted to the local building department if requested by the building official.

110.3 Asbestos inspection in buildings to be renovated or demolished; exceptions. In accordance with Section 36-99.7 of the Code of Virginia, the local building department shall not issue a building permit allowing a building for which an initial building permit was issued before January 1, 1985, to be renovated or demolished until the local building department receives certification from the owner or his agent that the affected portions of the building have been inspected for the presence of asbestos by an individual licensed to perform such inspections pursuant to Section 54.1-503 of the Code of Virginia and that no asbestos-containing materials were found or that appropriate response actions will be undertaken in accordance with the requirements of the Clean Air Act National Emission Standard for the Hazardous Air Pollutant (NESHAPS) (40 CFR Part 61, Subpart M), and the asbestos worker protection requirements established by the U.S. Occupational Safety and Health Administration for construction workers (29 CFR 1926.1101). Local educational agencies that are subject to the requirements established by the Environmental Protection Agency under the Asbestos Hazard Emergency Response Act (AHERA) shall also certify compliance with 40 CFR Part 763 and subsequent amendments thereto.

To meet the inspection requirements above, except with respect to schools, asbestos inspection of renovation projects consisting only of repair or replacement of roofing, floorcovering, or siding materials may be satisfied by a statement that the materials to be repaired or replaced are assumed to contain friable asbestos and that asbestos installation, removal, or encapsulation will be accomplished by a licensed asbestos contractor.

The provisions of this section shall not apply to single-family dwellings or residential housing with four or fewer units unless the renovation or demolition of such buildings is for commercial or public development purposes. The provisions of this section shall not apply if the combined amount of regulated asbestos-containing material involved in the renovation or demolition is less than 260 linear feet on pipes or less than 160 square feet on other facility components or less than 35 cubic feet off facility components where the length or area could not be measured previously.

An abatement area shall not be reoccupied until the building official receives certification from the owner that the response actions have been completed and final clearances have been measured. The final clearance levels for reoccupancy of the abatement area shall be 0.01 or fewer asbestos fibers per cubic centimeter if determined by Phase Contrast Microscopy analysis (PCM) or 70 or fewer structures per square millimeter if determined by Transmission Electron Microscopy analysis (TEM).

110.4 Fire apparatus access road requirements. The permit applicant shall be informed of any requirements for providing or maintaining fire apparatus access roads prior to the issuance of a building permit.

110.5 Signature on and posting of permits; limitation of approval. The signature of the building official or authorized representative shall be on or affixed to every permit. A copy of the permit shall be posted on the construction site for public inspection until the work is completed. Such posting shall include the street or lot number, if one has been assigned, to be readable from a public way. In addition, each building or structure to which a street number has been assigned shall, upon completion, have the number displayed so as to be readable from the public way.

A permit shall be considered authority to proceed with construction in accordance with this code, the approved construction documents, the permit application and any approved amendments or modifications. The permit shall not be construed to otherwise authorize the omission or amendment of any provision of this code.

110.6 Abandonment of work. A building official shall be permitted to revoke a permit if work on the site authorized by the permit is not commenced within six months after issuance of the permit, or if the authorized work on the site is suspended or abandoned for a period of six months after the permit is issued; however, permits issued for plumbing, electrical and mechanical work shall not be revoked if the building permit is still in effect. It shall be the responsibility of the permit applicant to prove to the building official that authorized work includes substantive progress, characterized by approved inspections as specified in Section 113.3 of at least one inspection within a period of six months or other evidence

that would indicate substantial work has been performed. Upon written request, the building official may grant one or more extensions of time, not to exceed one year per extension.

110.7 Single-family dwelling permits. The building official shall be permitted to require a three year time limit to complete construction of new detached single-family dwellings, additions to detached single-family dwellings and residential accessory structures. The time limit shall begin from the issuance date of the permit. The building official may grant extensions of time if the applicant can demonstrate substantive progress, characterized by approved inspections as specified in Section 113.3 of at least one inspection within a period of six months or other evidence that would indicate substantial work has been performed.

110.8 Revocation of a permit. The building official may revoke a permit or approval issued under this code in the case of any false statement, misrepresentation of fact, abandonment of work, failure to complete construction as required by Section 110.7 or incorrect information supplied by the applicant in the application or construction documents on which the permit or approval was based.

SECTION 111
RDP SERVICES

111.1 When required. In accordance with Section 54.1-410 of the Code of Virginia and under the general authority of this code, the local building department shall establish a procedure to ensure that construction documents under Section 109 are prepared by an RDP in any case in which the exemptions contained in Sections 54.1-401, 54.1-402 or 54.1-402.1 of the Code of Virginia are not applicable or in any case where the building official determines it necessary. When required under Section 54.1-402 of the Code of Virginia or when required by the building official, or both, construction documents shall bear the name and address of the author and his occupation.

> **Note:** Information on the types of construction required to be designed by an RDP is included in the "Related Laws Package" available from DHCD.

111.2 Special inspection requirements. Special inspections shall be conducted when required by Section 1704. Individuals or agencies, or both, conducting special inspections shall meet the qualification requirements of Sections 1703 and 1704.1. The permit applicant shall submit a completed statement of special inspections with the permit application. The building official shall review, and if satisfied that the requirements have been met, approve the statement of special inspections as required in Sections 1704.1.1 and 1705 as a requisite to the issuance of a building permit. The building official may require interim inspection reports. The building official shall receive, and if satisfied that the requirements have been met, approve a final report of special inspections as specified in Section 1704.1.2. All fees and costs related to the special inspections shall be the responsibility of the building owner.

SECTION 112
WORKMANSHIP, MATERIALS AND EQUIPMENT

112.1 General. It shall be the duty of any person performing work covered by this code to comply with all applicable provisions of this code and to perform and complete such work so as to secure the results intended by the USBC.

112.2 Alternative methods or materials. In accordance with Section 36-99 of the Code of Virginia, where practical, the provisions of this code are stated in terms of required level of performance so as to facilitate the prompt acceptance of new building materials and methods. When generally recognized standards of performance are not available, this section and other applicable requirements of this code provide for acceptance of materials and methods whose performance is substantially equal in safety to those specified on the basis of reliable test and evaluation data presented by the proponent. In addition, as a requirement of this code, the building official shall require that sufficient technical data be submitted to substantiate the proposed use of any material, equipment, device, assembly or method of construction.

112.3 Documentation and approval. In determining whether any material, equipment, device, assembly or method of construction complies with this code, the building official shall approve items listed by nationally recognized testing laboratories (NRTL), when such items are listed for the intended use and application, and in addition, may consider the recommendations of RDPs. Approval shall be issued when the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code and that the material, equipment, device, assembly or method of construction offered is, for the purpose intended, at least the equivalent of that prescribed by the code. Such approval is subject to all applicable requirements of this code and the material, equipment, device, assembly or method of

construction shall be installed in accordance with the conditions of the approval and their listings. In addition, the building official may revoke such approval whenever it is discovered that such approval was issued in error or on the basis of incorrect information, or where there are repeated violations of the USBC.

112.3.1 Conditions of listings. Where conflicts between this code and conditions of the listing or the manufacturer's installation instructions occur, the provisions of this code shall apply.

Exception: Where a code provision is less restrictive than the conditions of the listing of the equipment or appliance or the manufacturer's installation instructions, the conditions of the listing and the manufacturers installation instructions shall apply.

112.4 Used material and equipment. Used materials, equipment and devices may be approved provided they have been reconditioned, tested or examined and found to be in good and proper working condition and acceptable for use by the building official.

SECTION 113
INSPECTIONS

113.1 General. In accordance with Section 36-105 of the Code of Virginia, any building or structure may be inspected at any time before completion, and shall not be deemed in compliance until approved by the inspecting authority. Where the construction cost is less than $2,500, however, the inspection may, in the discretion of the inspecting authority, be waived. The building official shall coordinate all reports of inspections for compliance with the USBC, with inspections of fire and health officials delegated such authority, prior to the issuance of an occupancy permit.

113.1.1 Equipment required. Any ladder, scaffolding or test equipment necessary to conduct or witness a requested inspection shall be provided by the permit holder.

113.1.2 Duty to notify. When construction reaches a stage of completion that requires an inspection, the permit holder shall notify the building official.

113.1.3 Duty to inspect. Except as provided for in Section 113.7, the building official shall perform the requested inspection in accordance with Section 113.6 when notified in accordance with Section 113.1.2.

113.2 Prerequisites. The building official may conduct a site inspection prior to issuing a permit. When conducting inspections pursuant to this code, all personnel shall carry proper credentials.

113.3 Minimum inspections. The following minimum inspections shall be conducted by the building official when applicable to the construction or permit:

1. Inspection of footing excavations and reinforcement material for concrete footings prior to the placement of concrete.
2. Inspection of foundation systems during phases of construction necessary to assure compliance with this code.
3. Inspection of preparatory work prior to the placement of concrete.
4. Inspection of structural members and fasteners prior to concealment.
5. Inspection of electrical, mechanical and plumbing materials, equipment and systems prior to concealment.
6. Inspection of energy conservation material prior to concealment.
7. Final inspection.

113.4 Additional inspections. The building official may designate additional inspections and tests to be conducted during the construction of a building or structure and shall so notify the permit holder.

113.5 In-plant and factory inspections. When required by the provisions of this code, materials, equipment or assemblies shall be inspected at the point of manufacture or fabrication. The building official shall require the submittal of an evaluation report of such materials, equipment or assemblies. The evaluation report shall indicate the complete details of the assembly including a description of the assembly and its components, and describe the basis upon which the assembly is being evaluated. In addition, test results and other data as necessary for the building official to determine conformance with the USBC shall be submitted. For factory inspections, an identifying label or stamp permanently affixed to materials, equipment or assemblies indicating that a factory inspection has been made shall be acceptable instead of a written inspection report, provided the intent or meaning of such identifying label or stamp is properly substantiated.

113.6 Approval or notice of defective work. The building official shall either approve the work in writing or give written notice of defective work to the permit holder. Upon request of the permit holder, the notice shall reference the USBC section that serves as the basis for the defects and such defects shall be corrected and reinspected before any work proceeds that would conceal such defects. A record of all reports of inspections, tests, examinations, discrepancies and approvals issued shall be maintained by the building official and shall be communicated promptly in writing to the permit holder. Approval issued under this section may be revoked whenever it is discovered that such approval was issued in error or on the basis of incorrect information, or where there are repeated violations of the USBC.

113.7 Approved inspection agencies. The building official may accept reports of inspections and tests from individuals or inspection agencies approved in accordance with the building official's written policy required by Section 113.7.1. The individual or inspection agency shall meet the qualifications and reliability requirements established by the written policy. Under circumstances where the building official is unable to make the inspection or test required by Section 113.3 or 113.4 within two working days of a request or an agreed upon date or if authorized for other circumstances in the building official's written policy, the building official shall accept reports for review. The building official shall approve the report from such approved individuals or agencies unless there is cause to reject it. Failure to approve a report shall be in writing within two working days of receiving it stating the reason for the rejection. Reports of inspections conducted by approved third-party inspectors or agencies shall be in writing, shall indicate if compliance with the applicable provisions of the USBC have been met and shall be certified by the individual inspector or by the responsible officer when the report is from an agency.

Note: Photographs, videotapes or other sources of pertinent data or information may be considered as constituting such reports and tests.

113.7.1 Third-party inspectors. Each building official charged with the enforcement of the USBC shall have a written policy establishing the minimum acceptable qualifications for third-party inspectors. The policy shall include the format and time frame required for submission of reports, any prequalification or preapproval requirements before conducting a third-party inspection and any other requirements and procedures established by the building official.

113.7.2 Qualifications. In determining third-party inspector qualifications, the building official may consider such items as DHCD inspector certification, other state or national certifications, state professional registrations, related experience, education and any other factors that would demonstrate competency and reliability to conduct inspections.

113.8 Final inspection. Upon completion of a building or structure and before the issuance of a certificate of occupancy, a final inspection shall be conducted to ensure that any defective work has been corrected and that all work complies with the USBC and has been approved, including any work associated with modifications under Section 106.3. The approval of a final inspection shall be permitted to serve as the new certificate of occupancy required by Section 116.1 in the case of additions or alterations to existing buildings or structures that already have a certificate of occupancy.

SECTION 114
STOP WORK ORDERS

114.1 Issuance of order. When the building official finds that work on any building or structure is being executed contrary to the provisions of this code or any pertinent laws or ordinances, or in a manner endangering the general public, a written stop work order may be issued. The order shall identify the nature of the work to be stopped and be given either to the owner of the property involved, to the owner's agent or to the person performing the work. Following the issuance of such an order, the affected work shall cease immediately. The order shall state the conditions under which such work may be resumed.

114.2 Limitation of order. A stop work order shall apply only to the work identified in the order, provided that other work on the building or structure may be continued if not concealing the work covered by the order.

SECTION 115
VIOLATIONS

115.1 Violation a misdemeanor; civil penalty. In accordance with Section 36-106 of the Code of Virginia, it shall be unlawful for any owner or any other person, firm or corporation, on or after the effective date of any code provisions, to violate any such provisions. Any locality may adopt an ordinance that establishes a uniform schedule of civil penalties for violations of specified provisions of the code that are not abated or remedied promptly after receipt of a notice of violation from the local enforcement officer.

Note: See the full text of Section 36-106 of the Code of Virginia for additional requirements and criteria pertaining to legal action relative to violations of the code.

115.2 Notice of violation. The building official shall issue a written notice of violation to the responsible party if any violations of this code or any directives or orders of the building official have not been corrected or complied with in a reasonable time. The notice shall reference the code section upon which the notice is based and direct the discontinuance and abatement of the violation or the compliance with such directive or order. The notice shall be issued by either delivering a copy to the responsible party by mail to the last known address or delivering the notice in person or by leaving it in the possession of any person in charge of the premises, or by posting the notice in a conspicuous place if the person in charge of the premises cannot be found. The notice of violation shall indicate the right of appeal by referencing the appeals section. When the owner of the building or structure, or the permit holder for the construction in question, or the tenants of such building or structure, are not the responsible party to whom the notice of violation is issued, then a copy of the notice shall also be delivered to the such owner, permit holder or tenants.

115.2.1 Notice not to be issued under certain circumstances. When violations are discovered more than two years after the certificate of occupancy is issued or the date of initial occupancy, whichever occurred later, or more than two years after the approved final inspection for an alteration or renovation, a notice of violation shall only be issued upon advice from the legal counsel of the locality that action may be taken to compel correction of the violation. When compliance can no longer be compelled by prosecution under Section 36-106 of the Code of Virginia, the building official, when requested by the building owner, shall document in writing the existence of the violation noting the edition of the USBC the violation is under.

115.3 Further action when violation not corrected. If the responsible party has not complied with the notice of violation, the building official shall submit a written request to the legal counsel of the locality to institute the appropriate legal proceedings to restrain, correct or abate the violation or to require the removal or termination of the use of the building or structure involved. In cases where the locality so authorizes, the building official may issue or obtain a summons or warrant. Compliance with a notice of violation notwithstanding, the building official may request legal proceedings be instituted for prosecution when a person, firm or corporation is served with three or more notices of violation within one calendar year for failure to obtain a required construction permit prior to commencement of work subject to this code.

Note: See Section 19.2-8 of the Code of Virginia concerning the statute of limitations for building code prosecutions.

115.4 Penalties and abatement. Penalties for violations of the USBC shall be as set out in Section 36-106 of the Code of Virginia. The successful prosecution of a violation of the USBC shall not preclude the institution of appropriate legal action to require correction or abatement of a violation.

115.5 Transfer of ownership. In accordance with Section 36-105 of the Code of Virginia, if the local building department has initiated an enforcement action against the owner of a building or structure and such owner subsequently transfers the ownership of the building or structure to an entity in which the owner holds an ownership interest greater than 50%, the pending enforcement action shall continue to be enforced against the owner.

SECTION 116
CERTIFICATES OF OCCUPANCY

116.1 General; when to be issued. A certificate of occupancy indicating completion of the work for which a permit was issued shall be obtained prior to the occupancy of any building or structure, except as provided for in this section generally

and as specifically provided for in Section 113.8 for additions or alterations. The certificate shall be issued after completion of the final inspection and when the building or structure is in compliance with this code and any pertinent laws or ordinances, or when otherwise entitled. The building official shall, however, issue a certificate of occupancy within five working days after being requested to do so, provided the building or structure meets all of the requirements for a certificate.

Exception: A certificate of occupancy is not required for an accessory structure as defined in the International Residential Code.

116.1.1 Temporary certificate of occupancy. Upon the request of a permit holder, a temporary certificate of occupancy may be issued before the completion of the work covered by a permit, provided that such portion or portions of a building of structure may be occupied safely prior to full completion of the building or structure without endangering life or public safety.

116.2 Contents of certificate. A certificate of occupancy shall specify the following:

1. The edition of the USBC under which the permit is issued.
2. The group classification and occupancy in accordance with the provisions of Chapter 3.
3. The type of construction as defined in Chapter 6.
4. If an automatic sprinkler system is provided and whether or not such system was required.
5. Any special stipulations and conditions of the building permit and if any modifications were issued under the permit, there shall be a notation on the certificate that modifications were issued.

116.3 Suspension or revocation of certificate. A certificate of occupancy may be revoked or suspended whenever the building official discovers that such certificate was issued in error or on the basis of incorrect information, or where there are repeated violations of the USBC after the certificate has been issued or when requested by the code official under Section 105.7 of the Virginia Maintenance Code. The revocation or suspension shall be in writing and shall state the necessary corrections or conditions for the certificate to be reissued or reinstated in accordance with Section 116.3.1.

116.3.1 Reissuance of reinstatement of certificate of occupancy. When a certificate of occupancy has been revoked or suspended, it shall be reissued or reinstated upon correction of the specific condition or conditions cited as the cause of the revocation or suspension and the revocation or suspension of a certificate of occupancy shall not be used as justification for requiring a building or structure to be subject to a later edition of the code than that under which such building or structure was initially constructed.

116.4 Issuance of certificate for pre-USBC buildings or structures. When a building or structure was constructed prior to being subject to the initial edition of the USBC and the local building department does not have a certificate of occupancy for the building or structure, the owner or owner's agent may submit a written request for a certificate to be created. The building official, after receipt of the request, shall issue a certificate provided a determination is made that there are no current violations of the Virginia Maintenance Code or the Virginia Statewide Fire Prevention Code (13 VAC 5-51) and the occupancy classification of the building or structure has not changed. Such buildings and structures shall not be prevented from continued use.

Exception: When no certificate exists, but the local building department has records indicating that a certificate did exist, then the building official may either verify in writing that a certificate did exist, or issue a certificate based upon the records.

SECTION 117
TEMPORARY AND MOVED BUILDINGS AND STRUCTURES; DEMOLITION

117.1 Temporary building and structures. The building official is authorized to issue a permit for temporary buildings or structures. Such permits shall be limited as to time of service, but shall not be permitted for more than one year, except that upon the permit holder's written request, the building official may grant one or more extensions of time, not to exceed one

year per extension. The building official is authorized to terminate the approval and order the demolition or removal of temporary buildings or structures during the period authorized by the permit when determined necessary.

117.2 Moved buildings and structures. Any building or structure moved into a locality or moved to a new location within a locality shall not be occupied or used until a certification of occupancy is issued for the new location. Such moved buildings or structures shall be required to comply with the requirements of this code for a newly constructed building or structure unless meeting all of the following requirements relative to the new location:

1. There is no change in the occupancy classification from its previous location.

2. The building or structure was in compliance with all state and local requirements applicable to it in its previous location and is in compliance with all state and local requirements applicable if originally constructed in the new location.

3. The building or structure did not become unsafe during the moving process due to structural damage or for other reasons.

4. Any alterations, reconstruction, renovations or repairs made pursuant to the move are in compliance with applicable requirements of this code.

117.3 Demolition of buildings and structures. Prior to the issuance of a permit for the demolition of any building or structure, the owner or the owner's agent shall provide certification to the building official that all service connections of utilities have been removed, sealed or plugged satisfactorily and a release has been obtained from the associated utility company. The certification shall further provide that written notice has been given to the owners of adjoining lots and any other lots that may be affected by the temporary removal of utility wires or the temporary disconnection or termination of other services or facilities relative to the demolition. In addition, the requirements of Chapter 33 of the IBC for any necessary retaining walls or fences during demolition shall be applicable and when a building or structure is demolished or removed, the established grades shall be restored.

SECTION 118
BUILDINGS AND STRUCTURES BECOMING UNSAFE DURING CONSTRUCTION

118.1 Applicability. This section applies to buildings and structures for which a construction permit has been issued under this code and construction has not been completed or a certificate of occupancy has not been issued, or both. In addition, this section applies to any building or structure that is under construction or that was constructed without obtaining the required permits under this edition or any edition of the USBC.

Note: Existing buildings and structures other than those under construction or subject to this section are subject to the Virginia Maintenance Code that also has requirements for unsafe conditions.

118.2 Repair or removal of unsafe buildings or structures. Any building or structure subject to this section that is either deteriorated, improperly maintained, of faulty construction, deficient in adequate exit facilities, a fire hazard or dangerous to life or the public welfare, or both, or any combination of the foregoing, is an unsafe building or structure and shall be made safe through compliance with this code or shall be taken down and removed if determined necessary by the building official.

118.3 Inspection report and notice of unsafe building or structure. The building official shall inspect any building or structure reported to be unsafe and shall prepare a report to be filed in the records of the local building department. In addition to a description of any unsafe conditions found, the report shall include the occupancy classification of the building or structure and the nature and extent of any damages caused by collapse or failure of any building components. If the building or structure is determined by the building official to be unsafe, a notice of unsafe building or structure shall be issued in person to the owner and any permit holder. The notice shall describe any unsafe conditions and specify any repairs or improvements necessary to make the building or structure safe, or alternatively, when determined necessary by the building official, require the unsafe building or structure, or any portion of it, to be taken down and removed. The notice shall stipulate a time period for the repair or demolition of the unsafe building or structure and contain a statement requiring the person receiving the notice to determine whether to accept or reject the terms of the notice. If any persons to which the notice of unsafe building or structure is to be issued cannot be found after diligent search, as equivalent service, the notice

shall be sent by registered or certified mail to the last known address of such persons and a copy of the notice posted in a conspicuous place on the premises.

118.4 Vacating the unsafe building or structure. If any portion of an unsafe building or structure has collapsed or fallen, or if the building official determines there is actual and immediate danger of any portion collapsing or falling, and when life is endangered by the occupancy of the unsafe building or structure, the building official shall be authorized to order the occupants to immediately vacate the unsafe building or structure. When an unsafe building or structure is ordered to be vacated, the building official shall post a notice at each entrance that reads as follows:

"This Building (or Structure) is Unsafe and its Occupancy (or Use) is Prohibited by the Building Official."

After posting, occupancy or use of the unsafe structure shall be prohibited except when authorized to enter to conduct inspections, make required repairs or as necessary to demolish the building or structure.

118.5 Emergency repairs and demolition. To the extent permitted by the locality, the building official may authorize emergency repairs to unsafe buildings or structures when it is determined that there is an immediate danger of any portion of the unsafe building or structure collapsing or falling and when life is endangered. Emergency repairs may also be authorized when there is a code violation resulting in the immediate, serious and imminent threat to the life and safety of the occupants. The building official shall be permitted to authorize the necessary work to make the building or structure temporarily safe whether or not legal action to compel compliance has been instituted.

In addition, whenever an owner of an unsafe building or structure fails to comply with a notice to demolish issued under Section 118.3 in the time period stipulated, the building official shall be permitted to cause the unsafe building or structure to be demolished. In accordance with Sections 15.2-906 and 15.2-1115 of the Code of Virginia, the legal counsel of the locality may be requested to institute appropriate action against the property owner to recover the costs associated with any such emergency repairs or demolition and every such charge that remains unpaid shall constitute a lien against the property on which the emergency repairs or demolition were made and shall be enforceable in the same manner as provided in Articles 3 (Section 58.1-3940 et seq.) and 4 (Section 58.1-3965 et seq.) of Chapter 39 of Title 58.1 of the Code of Virginia.

Note: Building officials and local governing bodies should be aware that other statutes and court decisions may impact on matters relating to demolition, in particular whether newspaper publication is required if the owner cannot be located and whether the demolition order must be delayed until the owner has been given the opportunity for a hearing.

SECTION 119
APPEALS

119.1 Establishment of appeals board. In accordance with Section 36-105 of the Code of Virginia, there shall be established within each local building department a LBBCA. Whenever a county or a municipality does not have such a LBBCA, the local governing body shall enter into an agreement with the local governing body of another county or municipality or with some other agency, or a state agency approved by DHCD for such appeals resulting therefrom. Fees may be levied by the local governing body in order to defray the cost of such appeals. In addition, as an authorization in this code, separate LBBCAs may be established to hear appeals of different enforcement areas such as electrical, plumbing or mechanical requirements. Each such LBBCA shall comply with the requirements of this section.

119.2 Membership of board. The LBBCA shall consist of at least five members appointed by the locality for a specific term of office established by written policy. Alternate members may be appointed to serve in the absence of any regular members and as such, shall have the full power and authority of the regular members. Regular and alternate members may be reappointed. Written records of current membership, including a record of the current chairman and secretary shall be maintained in the office of the locality. In order to provide continuity, the terms of the members may be of different length so that less than half will expire in any one-year period. The LBBCA shall meet at least once annually to assure a duly constituted board, appoint officers as necessary, and receive such training on the code as may be appropriate or necessary from staff of the locality.

119.3 Officers and qualifications of members. The LBBCA shall annually select one of its regular members to serve as chairman. When the chairman is not present at an appeal hearing, the members present shall select an acting chairman. The locality or the chief executive officer of the locality shall appoint a secretary to the LBBCA to maintain a detailed record of all proceedings. Members of the LBBCA shall be selected by the locality on the basis of their ability to render fair and

competent decisions regarding application of the USBC and shall to the extent possible, represent different occupational or professional fields relating to the construction industry. At least one member should be an experienced builder; at least one member should be an RDP, and at least one member should be an experienced property manager. Employees or officials of the locality shall not serve as members of the LBBCA.

119.4 Conduct of members. No member shall hear an appeal in which that member has a conflict of interest in accordance with the State and Local Government Conflict of Interests Act (Section 2.2-3100 et seq. of the Code of Virginia). Members shall not discuss the substance of an appeal with any other party or their representatives prior to any hearings.

119.5 Right of appeal; filing of appeal application. Any person aggrieved by the local building department's application of the USBC or the refusal by to grant a modification to the provisions of the USBC may appeal to the LBBCA. The applicant shall submit a written request for appeal to the LBBCA within 30 calendar days of the receipt of the decision being appealed. The application shall contain the name and address of the owner of the building or structure and in addition, the name and address of the person appealing, when the applicant is not the owner. A copy of the building official's decision shall be submitted along with the application for appeal and maintained as part of the record. The application shall be marked by the LBBCA to indicate the date received. Failure to submit an application for appeal within the time limit established by this section shall constitute acceptance of a building official's decision.

Note: To the extent that a decision of a building official pertains to amusement devices there may be a right of appeal under the VADR.

119.6 Meetings and postponements. The LBBCA shall meet within 30 calendar days after the date of receipt of the application for appeal, except that a longer time period shall be permitted if agreed to by all the parties involved in the appeal. A notice indicating the time and place of the hearing shall be sent to the parties in writing to the addresses listed on the application at least 14 calendar days prior to the date of the hearing, except that a lesser time period shall be permitted if agreed to by all the parties involved in the appeal. When a quorum of the LBBCA is not present at a hearing to hear an appeal, any party involved in the appeal shall have the right to request a postponement of the hearing. The LBBCA shall reschedule the appeal within 30 calendar days of the postponement, except that a longer time period shall be permitted if agreed to by all the parties involved in the appeal.

119.7 Hearings and decision. All hearings before the LBBCA shall be open meetings and the appellant, the appellant's representative, the locality's representative and any person whose interests are affected by the building official's decision in question shall be given an opportunity to be heard. The chairman shall have the power and duty to direct the hearing, rule upon the acceptance of evidence and oversee the record of all proceedings. The LBBCA shall have the power to uphold, reverse or modify the decision of the official by a concurring vote of a majority of those present. Decisions of the LBBCA shall be final if no further appeal is made. The decision of the LBBCA shall be by resolution signed by the chairman and retained as part of the record of the appeal. Copies of the resolution shall be sent to all parties by certified mail. In addition, the resolution shall contain the following wording:

"Any person who was a party to the appeal may appeal to the State Review Board by submitting an application to such Board within 21 calendar days upon receipt by certified mail of this resolution. Application forms are available from the Office of the State Review Board, 600 East Main Street, Richmond, Virginia 23219, (804) 371-7150."

119.8 Appeals to the State Review Board. After final determination by the LBBCA in an appeal, any person who was a party to the appeal may further appeal to the State Review Board. In accordance with Section 36-98.2 of the Code of Virginia for state-owned buildings and structures, appeals by an involved state agency from the decision of the building official for state-owned buildings or structures shall be made directly to the State Review Board. The application for appeal shall be made to the State Review Board within 21 calendar days of the receipt of the decision to be appealed. Failure to submit an application within that time limit shall constitute an acceptance of the building official's decision. For appeals from a LBBCA, a copy of the building official's decision and the resolution of the LBBCA shall be submitted with the application for appeal to the State Review Board. Upon request by the office of the State Review Board, the LBBCA shall submit a copy of all pertinent information from the record of the appeal. In the case of appeals involving state-owned buildings or structures, the involved state agency shall submit a copy of the building official's decision and other relevant information with the application for appeal to the State Review Board. Procedures of the State Review Board are in accordance with Article 2 (Section 36-108 et seq.) of Chapter 6 of Title 36 of the Code of Virginia. Decisions of the State Review Board shall be final if no further appeal is made.

CHAPTER 2

DEFINITIONS

Add the following definitions to Section 202 of the IBC to read:

ABOVEGROUND LIQUID FERTILIZER STORAGE TANK (ALFST). A device that contains an accumulation of liquid fertilizer (i) constructed of nonearthen materials, such as concrete, steel or plastic, that provide structural support, (ii) having a capacity of 100,000 gallons (378 500 L) or greater, and (iii) the volume of which is more than 90 percent above the surface of the ground. The term does not include any wastewater treatment or wastewater storage tank, utility or industry pollution control equipment.

BUILDING REGULATIONS. Any law, rule, resolution, regulation, ordinance or code, general or special, or compilation thereof, heretofore or hereafter enacted or adopted by the Commonwealth or any county or municipality, including departments, boards, bureaus, commissions, or other agencies thereof, relating to construction, reconstruction, alteration, conversion, repair, maintenance, or use of structures and buildings and installation of equipment therein. The term does not include zoning ordinances or other land use controls that do not affect the manner of construction or materials to be used in the erection, alteration or repair of a building or structure.

CHANGE OF OCCUPANCY. A change in the use or occupancy of any building or structure which would place the building or structure in a different division of the same group of occupancies or in a different group of occupancies; or a change in the purpose or level of activity within a building or structure that involves a change in application of the requirements of this code.

CONSTRUCTION. The construction, reconstruction, alteration, repair, or conversion of buildings and structures.

DAY-NIGHT AVERAGE SOUND LEVEL (LDN). See Section 1202.1.

DHCD. The Virginia Department of Housing and Community Development.

EMERGENCY COMMUNICATION EQUIPMENT. See Section 902.1.

EMERGENCY PUBLIC SAFETY PERSONNEL. See Section 902.1.

EQUIPMENT. Plumbing, heating, electrical, ventilating, air-conditioning and refrigeration equipment, elevators, dumbwaiters, escalators, and other mechanical additions or installations.

FARM BUILDING OR STRUCTURE. A building or structure not used for residential purposes, located on property where farming operations take place, and used primarily for any of the following uses or combination thereof:

1. Storage, handling, production, display, sampling or sale of agricultural, horticultural, floricultural or silvicultural products produced in the farm.

2. Sheltering, raising, handling, processing or sale of agricultural animals or agricultural animal products.

3. Business or office uses relating to the farm operations.

4. Use of farm machinery or equipment or maintenance or storage of vehicles, machinery or equipment on the farm.

5. Storage or use of supplies and materials used on the farm.

6. Implementation of best management practices associated with farm operations.

INDUSTRIALIZED BUILDING. A combination of one or more sections or modules, subject to state regulations and including the necessary electrical, plumbing, heating, ventilating and other service systems, manufactured off-site and transported to the point of use for installation or erection, with or without other specified components, to comprise a finished building. Manufactured homes shall not be considered industrialized buildings for the purpose of this code.

HOSPICE FACILITY. See Section 308.3.1.

LBBCA. Local board of building code appeals.

LIQUID FERTILIZER. A fluid in which a fertilizer is in true solution. This term does not include anhydrous ammonia or a solution used in pollution control.

LOCAL BUILDING DEPARTMENT. The agency or agencies of any local governing body charged with the administration, supervision, or enforcement of this code, approval of construction documents, inspection of buildings or structures, or issuance of permits, licenses, certificates or similar documents.

LOCAL GOVERNING BODY. The governing body of any city, county or town in this Commonwealth.

LOCALITY. A city, county or town in this Commonwealth.

MANUFACTURED HOME. A structure subject to federal regulation, which is transportable in one or more sections; is eight body feet or more in width and 40 body feet or more in length in the traveling mode, or is 320 or more square feet when erected on site; is built on a permanent chassis; is designed to be used as a single-family dwelling, with or without a permanent foundation, when connected to the required utilities; and includes the plumbing, heating, air-conditioning, and electrical systems contained in the structure.

NIGHT CLUB. Any building in which the main use is a place of public assembly that provides exhibition, performance or other forms of entertainment; serves alcoholic beverages; and provides music and space for dancing.

SKIRTING. A weather-resistant material used to enclose the space from the bottom of the manufactured home to grade.

SOUND TRANSMISSION CLASS (STC) RATING. See Section 1202.1.

STATE REGULATED CARE FACILITY (SRCF). A building with an occupancy in Group R-2, R-3, R-4 or R-5 occupied by persons in the care of others where program oversight is provided by the Virginia Department of Social Services, the Virginia Department of Behavioral Health and Developmental Services, the Virginia Department of Education or the Virginia Department of Juvenile Justice.

STATE REVIEW BOARD. The Virginia State Building Code Technical Review Board as established under Section 36-108 of the Code of Virginia.

TECHNICAL ASSISTANT. Any person employed by or under an extended contract to a local building department or local enforcing agency for enforcing the USBC, including but not limited to inspectors and plans reviewers. For the purpose of this definition, an extended contract shall be a contract with an aggregate term of 18 months or longer.

TECHNICAL PRODUCTION AREA. See Section 410.2.

VADR. The Virginia Amusement Device Regulations (13 VAC 5-31).

VCS. The Virginia Certification Standards (13 VAC 5-21).

WORKING DAY. A day other than Saturday, Sunday or a legal local, state or national holiday.

Change the following definitions in Section 202 of the IBC to read:

AMBULATORY HEALTH CARE FACILITY. Buildings or portions thereof that are licensed by the Virginia Department of Health as outpatient surgical hospitals.

BUILDING. A combination of materials, whether portable or fixed, having a roof to form a structure for the use or occupancy by persons, or property. The word "building" shall be construed as though followed by the words "or part or parts thereof" unless the context clearly requires a different meaning. "Building" shall not include roadway tunnels and

bridges owned by the Virginia Department of Transportation, which shall be governed by construction and design standards approved by the Virginia Commonwealth Transportation Board.

For application of this code, each portion of a building that is completely separated from other portions by fire walls complying with Section 706 shall be considered as a separate building (see Section 503.1).

OWNER. The owner or owners of the freehold of the premises or lesser estate therein, a mortgagee or vendee in possession, assignee of rents, receiver, executor, trustee or lessee in control of a building or structure.

REGISTERED DESIGN PROFESSIONAL (RDP). An architect or professional engineer, licensed to practice architecture or engineering, as defined under § 54.1-400 of the Code of Virginia.

STRUCTURE. An assembly of materials forming a construction for occupancy or use including stadiums, gospel and circus tents, reviewing stands, platforms, stagings, observation towers, radio towers, water tanks, storage tanks (underground and aboveground), trestles, piers, wharves, swimming pools, amusement devices, storage bins, and other structures of this general nature but excluding water wells. The word "structure" shall be construed as though followed by the words "or part or parts thereof" unless the context clearly requires a different meaning. "Structure" shall not include roadway tunnels and bridges owned by the Virginia Department of Transportation, which shall be governed by construction and design standards approved by the Virginia Commonwealth Transportation Board.

Delete the following definitions from Section 202 of the IBC:

AGRICULTURAL, BUILDING.

EXISTING STRUCTURE.

FLY GALLERY.

GRIDIRON.

CHAPTER 3

USE AND OCCUPANCY CLASSIFICATION

Change exception 13 of Section 307.1 of the IBC to read:

13. The storage of black powder, smokeless propellant and small arms primers in Groups M, R-3 and R-5 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in the International Fire Code, as amended in Section 307.9.

Add Section 307.9 to the IBC to read:

307.9 Amendments. The following changes shall be made to the International Fire Code for the use of Exception 13 in Section 307.1:

1. Change Section 314.1 of the IFC to read as follows:

   314.1 General. Indoor displays constructed within any building or structure shall comply with Sections 314.2 through 314.5.

2. Add new Section 314.5 to the IFC to read as follows:

   314.5 Smokeless powder and small arms primers. Vendors shall not store, display or sell smokeless powder or small arms primers during trade shows inside exhibition halls except as follows:

   1. The amount of smokeless powder each vender may store is limited to the storage arrangements and storage amounts established in Section 3306.5.2.1.

2. Smokeless powder shall remain in the manufacturer's original sealed container and the container shall remain sealed while inside the building. The repackaging of smokeless powder shall not be performed inside the building. Damaged containers shall not be repackaged inside the building and shall be immediately removed from the building in such manner to avoid spilling any powder.

3. There shall be at least 50 feet separation between vendors and 20 feet from any exit.

4. Small arms primers shall be displayed and stored in the manufacturer's original packaging and in accordance with the requirements of Section 3306.5.2.3.

3. Change Exception 4 and add Exceptions 10 and 11 to Section 3301.1 of the IFC as follows:

4. The possession, storage and use of not more than 15 pounds (6.75 kg) of commercially manufactured sporting black powder, 20 pounds (9 kg) of smokeless powder and any amount of small arms primers for hand loading of small arms ammunition for personal consumption.

10. The display of small arms primers in Group M when in the original manufacturer's packaging.

11. The possession, storage and use of not more than 50 pounds (23 kg) of commercially manufactured sporting black powder, 100 pounds (45 kg) of smokeless powder, and small arms primers for hand loading of small arms ammunition for personal consumption in Group R-3 or R-5, or 200 pounds (91 kg) of smokeless powder when stored in the manufacturer's original containers in detached Group U structures at least 10 feet (3048 mm) from inhabited buildings and are accessory to Group R-3 or R-5.

4. Change the definition of Smokeless Propellants in Section 3302.1 of the IFC as follows:

SMOKELESS PROPELLANTS. Solid propellants, commonly referred to as smokeless powders, or any propellants classified by DOTn as smokeless propellants in accordance with NA3178 (Smokeless Powder for Small Arms), used in small arms ammunition, firearms, cannons, rockets, propellant-actuated devices and similar articles.

5. Change Section 3306.4 of the IFC to read as follows:

3306.4 Storage in residences. Propellants for personal use in quantities not exceeding 50 pounds (23 kg) of black powder or 100 pounds (45 kg) of smokeless powder shall be stored in original containers in occupancies limited to Group R-3 and R-5 or 200 pounds (91 kg) of smokeless powder when stored in the manufacturer's original containers in detached Group U structures at least 10 feet (3048 mm) from inhabited buildings and are accessory to Group R-3 or R-5. In other than Group R-3 or R-5, smokeless powder in quantities exceeding 20 pounds (9 kg) but not exceeding 50 pounds (23 kg) shall be kept in a wooden box or cabinet having walls of at least one inch (25 mm) nominal thickness or equivalent.

6. Delete Sections 3306.4.1 and 3306.4.2 of the IFC.

7. Change Section 3306.5.1.1 of the IFC to read as follows:

3306.5.1.1 Smokeless propellant. No more than 100 pounds (45 kg) of smokeless propellants in containers of eight pounds (3.6 kg) or less capacity shall be displayed in Group M occupancies.

8. Delete Section 3306.5.1.3 of the IFC.

9. Change Section 3306.5.2.1 of the IFC as follows:

3306.5.2.1 Smokeless propellant. Commercial stocks of smokeless propellants shall be stored as follows:

1. Quantities exceeding 20 pounds (9 kg), but not exceeding 100 pounds (45 kg) shall be stored in portable wooden boxes having walls of at least one inch (25 mm) nominal thickness or equivalent.

2. Quantities exceeding 100 pounds (45 kg), but not exceeding 800 pounds (363 kg), shall be stored in storage cabinets having walls at least one inch (25 mm) nominal thickness or equivalent. Not more than 400 pounds (182 kg) shall be stored in any one cabinet, and cabinets shall be separated by a distance of at least 25 feet (7620 mm) or by a fire partition having a fire-resistance rating of at least one hour.

3. Storage of quantities exceeding 800 pounds (363 kg), but not exceeding 5,000 pounds (2270 kg) in a building shall comply with all of the following:

   3.1. The storage is inaccessible to unauthorized personnel.

   3.2. Smokeless propellant shall be stored in nonportable storage cabinets having wood walls at least one inch (25 mm) nominal thickness or equivalent and having shelves with no more than 3 feet (914 mm) of vertical separation between shelves.

   3.3. No more than 400 pounds (182 kg) is stored in any one cabinet.

   3.4. Cabinets shall be located against walls with at least 40 feet (12 192 mm) between cabinets. The minimum required separation between cabinets may be reduced to 20 feet (6096 mm) provided that barricades twice the height of the cabinets are attached to the wall, midway between each cabinet. The barricades must extend a minimum of 10 feet (3048 mm) outward, be firmly attached to the wall, and be constructed of steel not less than 0.25 inch thick (6.4 mm), 2-inch (51 mm) nominal thickness wood, brick, or concrete block.

   3.5. Smokeless propellant shall be separated from materials classified as combustible liquids, flammable liquids, flammable solids, or oxidizing materials by a distance of 25 feet (7620 mm) or by a fire partition having a fire-resistance rating of 1 hour.

   3.6. The building shall be equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1.

4. Smokeless propellants not stored according to Item 1, 2, or 3 above shall be stored in a Type 2 or 4 magazine in accordance with Section 3304 and NFPA 495.

Change Section 308.2 of the IBC to read:

308.2 Group I-1. This occupancy shall include buildings, structures or parts thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment that provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities
Congregate care facilities
Group homes
Halfway houses
Residential board and care facilities
Social rehabilitation facilities

Exception: In Group I-1 occupancies, not more than five of the residents may require physical assistance from staff to respond to an emergency situation when all residents that may require the physical assistance reside on a single level of exit discharge.

A facility such as the above with five or fewer persons shall be classified as a Group R-3 or shall comply with the International Residential Code in accordance with Section 101.2. A facility such as above, housing at least six and not more than 16 persons, shall be classified as Group R-4.

Change Section 308.3 of the IBC to read:

308.3 Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care for persons who are not capable of self-preservation. This group shall include, but not be limited to, the following:

Child care facilities
Convalescent facilities
Detoxification facilities
Hospice facilities
Hospitals
Mental hospitals
Nursing homes

Exception: Hospice facilities occupied by 16 or less occupants, excluding staff, are permitted to be classified as Group R-4.

Add the following definition to Section 308.3.1 of the IBC:

HOSPICE FACILITY. An institution, place, or building owned or operated by a hospice provider and licensed by the Virginia Department of Health as a hospice facility to provide room, board, and palliative and supportive medical and other health services to terminally ill patients and their families, including respite and symptom management, on a 24-hour basis to individuals requiring such care pursuant to the orders of a physician.

Change Section 308.5.2 of the IBC to read:

308.5.2 Child care facility. A facility other than family day homes under Section 310.4 that provides supervision and personal care on less than a 24-hour basis for more than five children 2-1/2 years of age or less shall be classified as Group I-4.

Exception: A child day care facility that provides care for more than five but no more than 100 children 2-1/2 years or less of age, where the rooms in which the children are cared for are located on a level of exit discharge serving such rooms and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

Change occupancy classifications "R-1" and "R-4" and add new occupancy classification "R-5" to Section 310 of the IBC to read:

R-1 Residential occupancies containing sleeping units where the occupants are primarily transient in nature, including:

Boarding houses (transient)
Hotels (transient)
Motels (transient)

Congregate living facilities (transient) with 10 or fewer occupants are permitted to comply with the construction requirements for Group R-3.

Exceptions:

1. Nonproprietor occupied bed and breakfast and other transient boarding facilities not more than three stories above grade plane in height with a maximum of 10 occupants total are permitted to be classified as either Group R-3 or Group R-5 provided that smoke alarms are installed in compliance with Section 907.2.10.1.2 for Group R-3 or Section 313.1 of the International Residential Code for Group R-5.

2. Proprietor occupied bed and breakfast and other transient boarding facilities not more than three stories above grade plane in height, that are also occupied as the residence of the proprietor, with a maximum of five guest room sleeping units provided for the transient occupants are permitted to be classified as either Group R-3 or R-5 provided that smoke alarms are installed in compliance with Section 907.2.10.1.2 for Group R-3 or Section 313.1 of the International Residential Code for Group R-5.

R-4 Residential occupancies shall include buildings arranged for occupancy as residential care/assisted living facilities including more than five but not more than 16 occupants, excluding staff and buildings arranged for occupancy as hospice facilities with not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code, or shall comply with the IRC provided the building is protected by an automatic sprinkler system installed in accordance with Section 903.2.7.

Exceptions:

1. Group homes licensed by the Virginia Department of Behavioral Health and Developmental Services that house no more than eight persons with one or more resident counselors shall be classified as Group R-2, R-3, R-4 or R-5. Not more than five of the persons may require physical assistance from staff to respond to an emergency situation.

2. In Group R-4 occupancies, not more than five of the residents may require physical assistance from staff to respond to an emergency situation when all residents that may require the physical assistance from staff reside on a single level of exit discharge of exit discharge and other than using a ramp, a change of elevation using steps or stairs is not within the path of egress to an exit door.

3. Assisted living facilities licensed by the Virginia Department of Social Services that house no more than eight persons, with one or more resident counselors, and all of the residents are capable of responding to an emergency situation without physical assistance from staff, may be classified as Group R-2, R-3 or R-5.

4. Assisted living facilities licensed by the Virginia Department of Social Services that house no more than eight persons, with one or more resident counselors, may be classified as Group R-5 when in compliance with all of the following:

   4.1. The building is protected by an automatic sprinkler system installed in accordance with Section 903.3 or Section P2904 of the IRC.

   4.2. Not more than five of the residents may require physical assistance from staff to respond to an emergency situation.

   4.3. All residents that may require physical assistance from staff to respond to an emergency situation reside on a single level of exit discharge and other than using a ramp, a change in elevation using steps or stairs is not within the path of egress to an exit door.

5. Hospice facilities with five or fewer occupants are permitted to comply with the IRC provided the building is protected by an automatic sprinkler system in accordance with IRC Section P2904 or IBC Section 903.3.

R-5 Residential occupancies in detached one- and two-family dwellings, townhouses and accessory structures within the scope of the International Residential Code, also referred to as the "IRC."

Change the definition of "Residential care/assisted living facilities" in Section 310.2 of the IBC to read:

RESIDENTIAL CARE/ASSISTED LIVING FACILITIES. Any congregate residential setting that provides or coordinates personal and health care services, 24-hour supervision and assistance for the maintenance or care of four or more adults who are aged, infirm or disabled and who are cared for in a primarily residential setting, and provides for the protection, general supervision and oversight of the physical and mental well-being of aged, infirmed or disabled individuals. Residents are capable of self-evacuation.

Add Section 310.3 to the IBC to read:

310.3 Group R-5. The construction of Group R-5 structures shall comply with the IRC. The amendments to the IRC set out in Section 310.6 shall be made to the IRC for its use as part of this code. In addition, all references to Section 101.2 in the IBC relating to the construction of such structures subject to the IRC shall be considered to be references to this section.

Add Section 310.3.1 to the IBC to read:

310.3.1 Additional requirements. Methods of construction, materials, systems, equipment or components for Group R-5 structures not addressed by prescriptive or performance provisions of the IRC shall comply with applicable IBC requirements.

Add Section 310.4 to the IBC to read:

310.4 Family day homes. Family day homes where program oversight is provided by the Virginia Department of Social Services shall be classified as Group R-2, R-3 or R-5.

Note: Family day homes may generally care for up to 12 children. See the DHCD Related Laws Package for additional information.

Add Section 310.5 to the IBC to read:

310.5 Radon-resistant construction in Group R-3 and R-4 structures. Group R-3 and R-4 structures shall be subject to the radon-resistant construction requirements in Appendix F in localities enforcing such requirements pursuant to Section R325 of the IRC.

Add Section 310.6 to the IBC to read:

310.6 Amendments to the IRC. The following changes shall be made to the IRC for its use as part of this code:

1. Change Section R301.2.1 to read:

   R301.2.1 Wind limitations. Buildings and portions thereof shall be limited by wind speed, as defined in Table R301.2(1), and construction methods in accordance with this code. Basic wind speeds shall be determined from Figure R301.2(4). Where different construction methods and structural materials are used for various portions of a building, the applicable requirements of this section for each portion shall apply. Where loads for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors are not otherwise specified, the loads listed in Table R301.2(2) adjusted for height and exposure using Table R301.2(3) shall be used to determine design load performance requirements for wall coverings, curtain walls, roof coverings, exterior windows, skylights, garage doors and exterior doors. Asphalt shingles shall be designed for wind speeds in accordance with Section R905.2.6. Wind speeds for localities in special wind regions, near mountainous terrain, and near gorges shall be based on elevation. Areas at 4,000 feet in elevation or higher shall use 110 V mph (48.4 m/s) and areas under 4,000 feet in elevation shall use 90 V mph (39.6 m/s). Gorge areas shall be based on the highest recorded speed per locality or in accordance with local jurisdiction requirements determined in accordance with Section 6.5.4 of ASCE 7.

2. Change Section R301.2.1.1 to read:

   R301.2.1.1 Design criteria. Construction in regions where the basic wind speeds from Figure R301.2(4) equal or exceed 110 miles per hour (49 m/s) shall be designed in accordance with one of the following methods. The elements of design not addressed by those documents in Items 1 through 4 shall be in accordance with this code.

   1. American Forest and Paper Association (AF&PA) Wood Frame Construction Manual for One- and Two-Family Dwellings (WFCM); or

   2. International Code Council (ICC) Standard for Residential Construction in High Wind Regions (ICC-600); or

3. Minimum Design Loads for Buildings and Other Structures (ASCE-7); or

4. American Iron and Steel Institute (AISI), Standard for Cold-Formed Steel Framing-Prescriptive Method for One- and Two-Family Dwellings (AISI S230).

5. Concrete construction shall be designed in accordance with the provisions of this code.

6. Structural insulated panel (SIP) walls shall be designed in accordance with the provisions of this code.

3. Change Section R301.2.2.1.1 to read:

R301.2.2.1.1 Alternate determination of seismic design category. The Seismic Design Categories and corresponding Short Period Design Spectral Response Accelerations, S_{DS} shown in Figure R301.2(2) are based on soil Site Class D, as defined in Section 1613.5.2 of the International Building Code. If soil conditions are other than Site Class D, the Short Period Design Spectral Response Accelerations, S_{DS}, for a site can be determined according to Section 1613.5 of the International Building Code. The value of S_{DS} determined according to Section 1613.5 of the International Building Code is permitted to be used to set the seismic design category according to Table R301.2.2.1.1, and to interpolate between values in Tables R602.10.3(3), R603.7 and other seismic design requirements of this code.

4. Delete Section R301.2.2.3 and all subsections.

5. Delete Section R301.2.2.4.

6. Change the exception to Item 1 of Section R301.3 to read:

Exception: For wood framed wall buildings with bracing in accordance with Section R602.10, the wall stud clear height used to determine the maximum permitted story height may be increased to 12 feet (3658 mm) without requiring an engineered design for the building wind and seismic force resisting systems.

7. Add Exception 6 to Section R302.1 to read:

6. Decks and open porches.

8. Change the last column and add footnote "a" to Table R302.1 as shown:

MINIMUM FIRE SEPARATION DISTANCE
<5 feet[a]
≥5 feet[a]
≥2 feet to 5 feet[a]
5 feet[a]
<3 feet
3 feet
5 feet[a]
<5 feet[a]
5 feet[a]

a. The minimum fire separation distance shall be reduced to 3 feet in developments which are fully sprinklered as provided for in Sections R313.1 or R313.2.

9. Change the exception in Section R302.2 to require a common two-hour fire-resistance-rated wall instead of a one-hour fire-resistance-rated wall, unless the townhouse development is fully sprinklered as provided for in Section R313.1, in which case a common one-hour fire-resistive-rated wall shall be permitted between townhouses.

10. Add the following sentence to the end of Section R302.3 to read:

Dwelling unit separation wall assemblies that are constructed on a lot line shall be constructed as required in Section R302.2 for townhouses.

11. Add an exception to Section R303.8 to read:

Exception: Seasonal structures not used as a primary residence for more than 90 days per year, unless rented, leased or let on terms expressed or implied to furnish heat, shall not be required to comply with this section.

12. Add Section R303.8.1 to read:

R303.8.1 Nonowner occupied required heating. Every dwelling unit or portion thereof which is to be rented, leased or let on terms either expressed or implied to furnish heat to the occupants thereof shall be provided with facilities in accordance with Section R303.8 during the period from October 15 to May 1.

13. Add Section R303.9 to read:

R303.9 Insect screens. Every door, window and other outside opening required for ventilation purposes shall be supplied with approved tightly fitted screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

14. Add Section R306.5 to read:

R306.5 Water supply sources and sewage disposal systems. The water and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public or private water supply and a public or private sewer system. As provided for in Section 103.11 for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality.

Note: See also the Memorandums of Agreement in the "Related Laws Package," which is available from the Virginia Department of Housing and Community Development.

15. Change Section R310.1 to read:

R310.1 Emergency escape and rescue required. Basements and each sleeping room designated on the construction documents shall have at least one openable emergency escape and rescue opening. Such opening shall be directly to the exterior of the building or to a deck, screen porch or egress court, all of which shall provide access to a public street, public alley or yard. Where emergency escape and rescue openings are provided, they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside, except that tilt-out or removable sash designed windows shall be permitted to be used. Emergency escape and rescue openings with a finished height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2.

Exceptions:

1. Dwelling units equipped throughout with an approved automatic sprinkler system installed in accordance with NFPA 13, 13R , 13D or Section P2904.

2. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m^2).

16. Change Section R310.1.1 to read:

R310.1.1 Minimum opening area. All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.530 m^2), including the tilting or removal of the sash as the normal operation to comply with Sections R310.1.2 and R310.1.3.

Exception: Grade floor openings shall have a minimum net clear opening of 5 square feet (0.465 m^2).

17. Change Section R311.7.4.1 to read:

R311.7.4.1 Riser height. The maximum riser height shall be 8-1/4 inches (210 mm). The riser shall be measured vertically between the leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

18. Change Section R311.7.4.2 to read:

R311.7.4.2 Tread depth. The minimum tread depth shall be 9 inches (229 mm). The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Consistently shaped winders at the walkline shall be allowed within the same flight of stairs as rectangular treads and do not have to be within 3/8 inch (9.5 mm) of the rectangular tread depth. Winder treads shall have a minimum tread depth of 10 inches (254 mm) measured between the vertical planes of the foremost projection of adjacent treads at the intersection with the walkline. Winder treads shall have a minimum tread depth of 6 inches (152 mm) at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walkline shall not exceed the smallest winder tread by more than 3/8 inch (9.5 mm).

19. Change Section R311.7.6 to read:

R311.7.6 Stairway walking surface. The walking surface of treads and landings of stairways shall be level or sloped no steeper than one unit vertical in 48 inches horizontal (two-percent slope).

20. Replace Section R313 with the following:

SECTION R313
AUTOMATIC FIRE SPRINKLER SYSTEMS

R313.1 Townhouse automatic fire sprinkler systems. Notwithstanding the requirements of Section 103.8, where installed, an automatic residential fire sprinkler system for townhouses shall be designed and installed in accordance with NFPA 13D or Section P2904.

Exception: An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

R313.2 One- and two-family dwellings automatic fire sprinkler systems. Notwithstanding the requirements of Section 103.8, where installed, an automatic residential fire sprinkler system shall be designed and installed in accordance with NFPA 13D or Section P2904.

Exception: An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential fire sprinkler system.

21. Change Section R314.2 to read:

R314.2 Smoke detection systems. Household fire alarm systems installed in accordance with NFPA 72 that include smoke alarms, or a combination of smoke detector and audible notification device installed as required by this section for smoke alarms, shall be permitted. The household fire alarm system shall provide the same level of smoke detection and alarm as required by this section for smoke alarms. Where a household fire warning system is installed using a combination of smoke detector and audible notification device(s), the system shall become a permanent fixture of the dwelling unit.

Exception: Where smoke alarms are provided meeting the requirements of Section R314.4.

22. Delete Section R314.3.1.

23. Delete Section R315.2.

24. Change Section R315.3 to read:

R315.3 Alarm requirements. Single station carbon monoxide alarms shall be hard wired, plug-in or battery type, listed as complying with UL 2034, and shall be installed in accordance with this code and the manufacturer's installation instructions.

25. Add Section R324 Radon-Resistant Construction.

26. Add Section R324.1 to read:

R324.1 Local enforcement of radon requirements. Following official action under Article 7 (Section 15.2-2280 et seq.) of Chapter 22 of Title 15.2 of the Code of Virginia by a locality in areas of high radon potential, as indicated by Zone 1 on the U.S. EPA Map of Radon Zones (IRC Figure AF101), such locality shall enforce the provisions contained in Appendix F.

Exception: Buildings or portions thereof with crawl space foundations which are ventilated to the exterior, shall not be required to provide radon-resistant construction.

27. Add Section R325 Swimming Pools, Spas and Hot Tubs.

28. Add Section R325.1 to read:

R325.1 Use of Appendix G for swimming pools, spas and hot tubs. In addition to other applicable provisions of this code, swimming pools, spas and hot tubs shall comply with the provisions in Appendix G.

29. Add Section R326 Patio Covers.

30. Add Section R326.1 to read:

R326.1 Use of Appendix H for patio covers. Patio covers shall comply with the provisions in Appendix H.

31. Add Section R327 Sound Transmission.

32. Add Section R327.1 to read:

R327.1 Sound transmission between dwelling units. Construction assemblies separating dwelling units shall provide airborne sound insulation as required in Appendix K.

33. Add Section R327.2 to read:

R327.2 Airport noise attenuation. This section applies to the construction of the exterior envelope of detached one- and two-family dwellings and multiple single-family dwellings (townhouses) not more than three stories high with separate means or egress within airport noise zones when enforced by a locality pursuant to Section 15.2-2295 of the Code of Virginia. The exterior envelope of such structures shall comply with Section 1207.4 of the state amendments to the IBC.

34. Add Section R328 Gray Water and Rain Water Recycling Systems.

35. Add Section R328.1 to read:

R328.1 Use of Appendix O for gray water and rain water recycling systems. In addition to other applicable provisions of this code, gray water recycling systems and rain water recycling systems shall comply with the provisions in Appendix O. In the use of Appendix O for rain water recycling systems, the term "rain water" shall be substituted for the term "gray water." Gray water recycling systems and rain water recycling systems shall be separate systems and shall not be interconnected.

36. Add Section R329 Fire Extinguishers.

37. Add Section R329.1 to read:

R329.1 Kitchen areas. Other than where the dwelling is equipped with an approved sprinkler system in accordance with Section R313, a fire extinguisher having a rating of 2-A:10-B:C or an approved equivalent type of fire extinguisher shall be installed in the kitchen area.

38. Change Section R401.3 to read:

R401.3 Drainage. Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection that does not create a hazard to the dwelling unit. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of 6 inches (152 mm)within the first 10 feet (3048 mm).

Exception: Where lot lines, walls, slopes or other physical barriers prohibit 6 inches (152 mm) of fall within 10 feet (3048 mm), drains or swales shall be constructed to ensure drainage away from the structure. Impervious surfaces within 10 feet (3048 mm) of the building foundation shall be sloped a minimum of 2 percent away from the building.

39. Change Section R403.1 to read:

R403.1 General. All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, wood foundations, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill.

Exception: One-story detached accessory structures used as tool and storage sheds, playhouses and similar uses, not exceeding 256 square feet (23.7824 m^2) of building area, provided all of the following conditions are met:

1. The building eave height is 10 feet or less.

2. The maximum height from the finished floor level to grade does not exceed 18 inches.

3. The supporting structural elements in direct contact with the ground shall be placed level on firm soil and when such elements are wood they shall be approved pressure preservative treated suitable for ground contact use.

4. The structure is anchored to withstand wind loads as required by this code.

5. The structure shall be of light-frame construction whose vertical and horizontal structural elements are primarily formed by a system of repetitive wood or light gauge steel framing members, with walls and roof of light weight material, not slate, tile, brick or masonry.

40. Change Exceptions 2 and 3 in Section R403.1.6 to read:

2. Walls 24 inches (610 mm) total length or shorter connecting offset braced wall panels shall be anchored to the foundation with a minimum of one anchor bolt located in the center third of the plate section.

3. Connection of walls 12 inches (305 mm) total length or shorter connecting offset braced wall panels to the foundation without anchor bolts shall be permitted.

41. Delete Item 5 of Section R403.1.6.1.

42. Add Section R408.3.1 to read:

R408.3.1 Termite inspection. Where an unvented crawl space is installed and meets the criteria in Section R408, the vertical face of the sill plate shall be clear and unobstructed and an inspection gap shall be provided below the sill plate along the top of any interior foundation wall covering. The gap shall be a minimum of one inch (25.4 mm) and a maximum of two inches (50.8 mm) in width and shall extend throughout all parts of any foundation that is enclosed. Joints between the sill plate and the top of any interior wall covering may be sealed.

Exceptions:

1. In areas not subject to damage by termites as indicated by Table R301.2(1).

2. Where other approved means are provided to inspect for potential damage.

Where pier and curtain foundations are installed as depicted in Figure R404.1.5(1), the inside face of the rim joist and sill plate shall be clear and unobstructed except for construction joints which may be sealed.

Exception: Fiberglass or similar insulation may be installed if easily removable.

43. Change Section R502.2.1 to read:

R502.2.1 Framing at braced wall panels. A load path for lateral forces shall be provided between floor framing and braced wall panels located above or below a floor, as specified in Sections R602.3.5 and R602.10.8.

44. Change Section R506.2.1 to read:

R506.2.1 Fill. Fill material shall be free of vegetation and foreign material and shall be natural nonorganic material that is not susceptible to swelling when exposed to moisture. The fill shall be compacted to assure uniform support of the slab, and except where approved, the fill depth shall not exceed 24 inches (610 mm) for clean sand or gravel and 8 inches (203 mm) for earth.

Exception: Material other than natural material may be used as fill material when accompanied by a certification from an RDP and approved by the building official.

45. Change Section R506.2.2 to read:

R506.2.2 Base. A 4-inch-thick (102 mm) base course consisting of clean graded sand, gravel or crushed stone passing a 2-inch (51 mm) sieve shall be placed on the prepared subgrade when the slab is below grade.

Exception: A base course is not required when the concrete slab is installed on well drained or sand-gravel mixture soils classified as Group I according to the United Soil Classification System in accordance with Table R405.1. Material other than natural material may be used as base course material when accompanied by a certification from an RDP and approved by the building official.

46. Modify Table R602.3(1) to change and add items as shown:

7	Built-up studs, face nail	10d (3" x 0.128")	24" o.c.
7a	Abutting studs at intersecting wall corners, face nail	16d (3½" x 0.135")	12" o.c.
26a	Rim joist or blocking to sill plate, toe nail	8d (2½" x 0.113")	6" o.c.

47. Add Section R602.3.5 to read:

R602.3.5 Braced wall panel uplift load path. Braced wall panels located at exterior walls that support roof rafters or trusses (including stories below top story) shall have the framing members connected in accordance with one of the following:

1. Fastening in accordance with Table R602.3(1) where:

1.1. The basic wind speed does not exceed 90 mph (40 m/s), the wind exposure category is B, the roof pitch is 5:12 or greater, and the roof span is 32 feet (9754 mm) or less, or

1.2. The net uplift value at the top of a wall does not exceed 100 plf (146 N/mm). The net uplift value shall be determined in accordance with Section R802.11 and shall be permitted to be reduced by 60 plf (57 N/mm) for each full wall above.

2. Where the net uplift value at the top of a wall exceeds 100 plf (146 N/mm), installing approved uplift framing connectors to provide a continuous load path from the top of the wall to the foundation or to a point where the uplift force is 100 plf (146 N/mm) or less. The net uplift value shall be as determined in Item 1.2 above.

3. Wall sheathing and fasteners designed in accordance with accepted engineering practice to resist combined uplift and shear forces.

48. Change Section R602.9 to read:

R602.9 Cripple walls. Foundation cripple walls shall be framed of studs not smaller than the studding above. When exceeding 4 feet (1219 mm) in height, such walls shall be framed of studs having the size required for an additional story.

Cripple walls with a stud height less than 14 inches (356 mm) shall be continuously sheathed on one side with wood structural panels fastened to both the top and bottom plates in accordance with Table R602.3(1), or the cripple walls shall be constructed of solid blocking. Cripple walls shall be supported on continuous foundations.

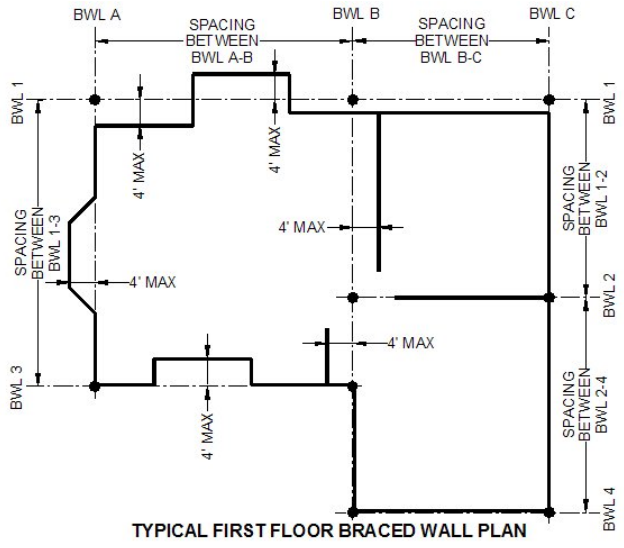
49. Replace Section R602.10, including all subsections, with the following:

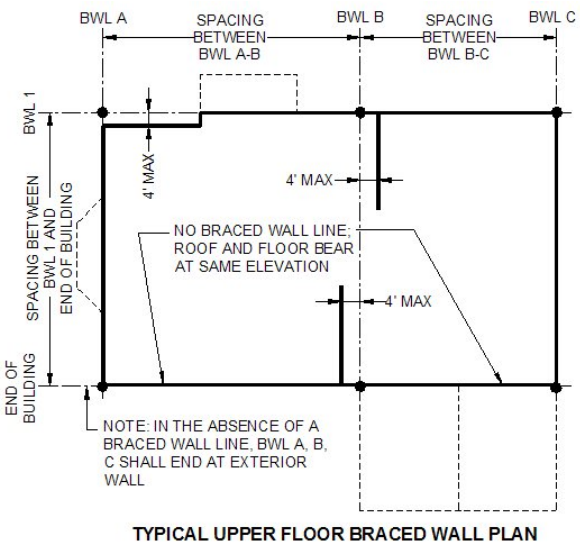
R602.10 Wall bracing. Buildings shall be braced in accordance with this section, or, when applicable, Section R602.12. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1.

The building official may require the permit applicant to identify and locate on the construction documents braced wall lines and braced wall panels as described herein.

R602.10.1 Braced wall lines. For the purpose of determining the amount and location of bracing required in each story level of a building, braced wall lines shall be designated as straight lines in the building plan placed in accordance with this section.

R602.10.1.1 Length of a braced wall line. The length of a braced wall line shall be the distance between its ends. The end of a braced wall line shall be the intersection with a perpendicular braced wall line, an angled braced wall line as permitted in Section R602.10.1.4 or an exterior wall as shown in Figure R602.10.1.1.





For SI: 1 foot = 304.8 mm.

FIGURE 602.10.1.1
BRACED WALL LINES

R602.10.1.2 Offsets along a braced wall line. All exterior walls parallel to a braced wall line shall be permitted to offset up to 4 feet (1219 mm) from the designated braced wall line location as shown Figure R602.10.1.1. Interior walls used as bracing shall be permitted to offset up to 4 feet (1219 mm) from a braced wall line through the interior of the building as shown in Figure R602.10.1.1.

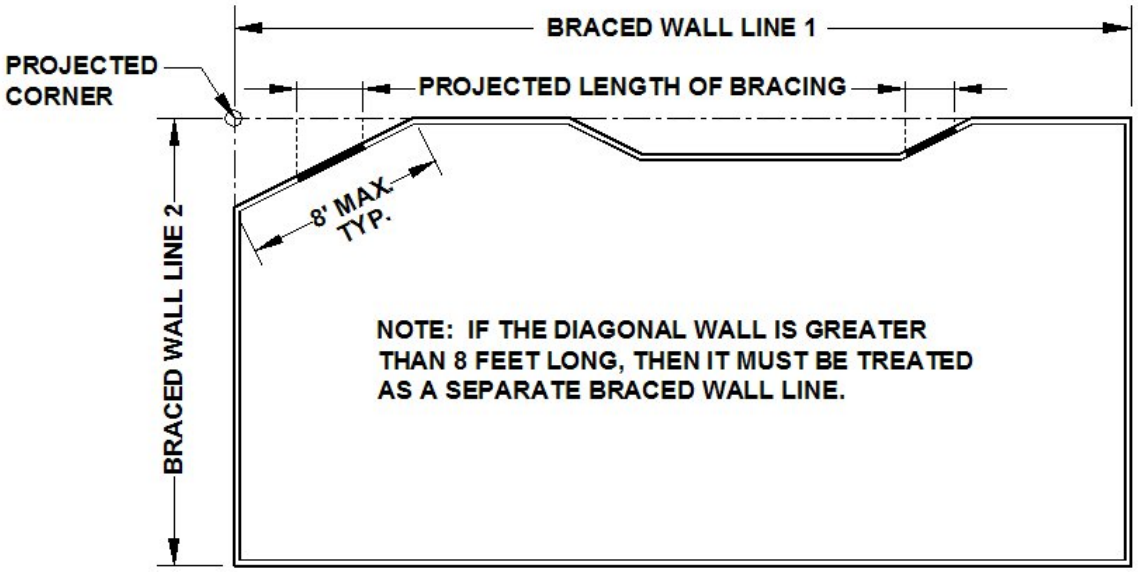
R602.10.1.3 Spacing of braced wall lines. There shall be a minimum of two braced wall lines in both the longitudinal and transverse direction as shown in Figure R602.10.1.1. Intermediate braced wall lines through the interior of the building shall be permitted. The spacing between parallel braced wall lines shall be in accordance with Table R602.10.1.3.

TABLE 602.10.1.3
BRACED WALL LINE SPACING

APPLICATION	CONDITION	BUILDING TYPE	BRACED WALL LINE SPACING CRITERIA	
			Maximum Spacing	Exception to Maximum Spacing
Wind bracing	85 mph to <110 mph	Detached, townhouse	60 feet	None
Seismic bracing	SDC A - C	Detached	Use wind bracing	
	SDC A – B	Townhouse	Use wind bracing	
	SDC C	Townhouse	35 feet	Up to 50 feet when length of required bracing per Table R602.10.3(3) is adjusted in accordance with Table R602.10.3(4)

For SI: 1 foot = 304.8 mm.

R602.10.1.4 Angled walls. Any portion of a wall along a braced wall line shall be permitted to angle out of plane for a maximum diagonal length of 8 feet (2438 mm). Where the angled wall occurs at a corner, the length of the braced wall line shall be measured from the projected corner as shown in Figure R602.10.1.4. Where the diagonal length is greater than 8 feet (2438 mm), it shall be considered a separate braced wall line and shall be braced in accordance with Section R602.10.1.



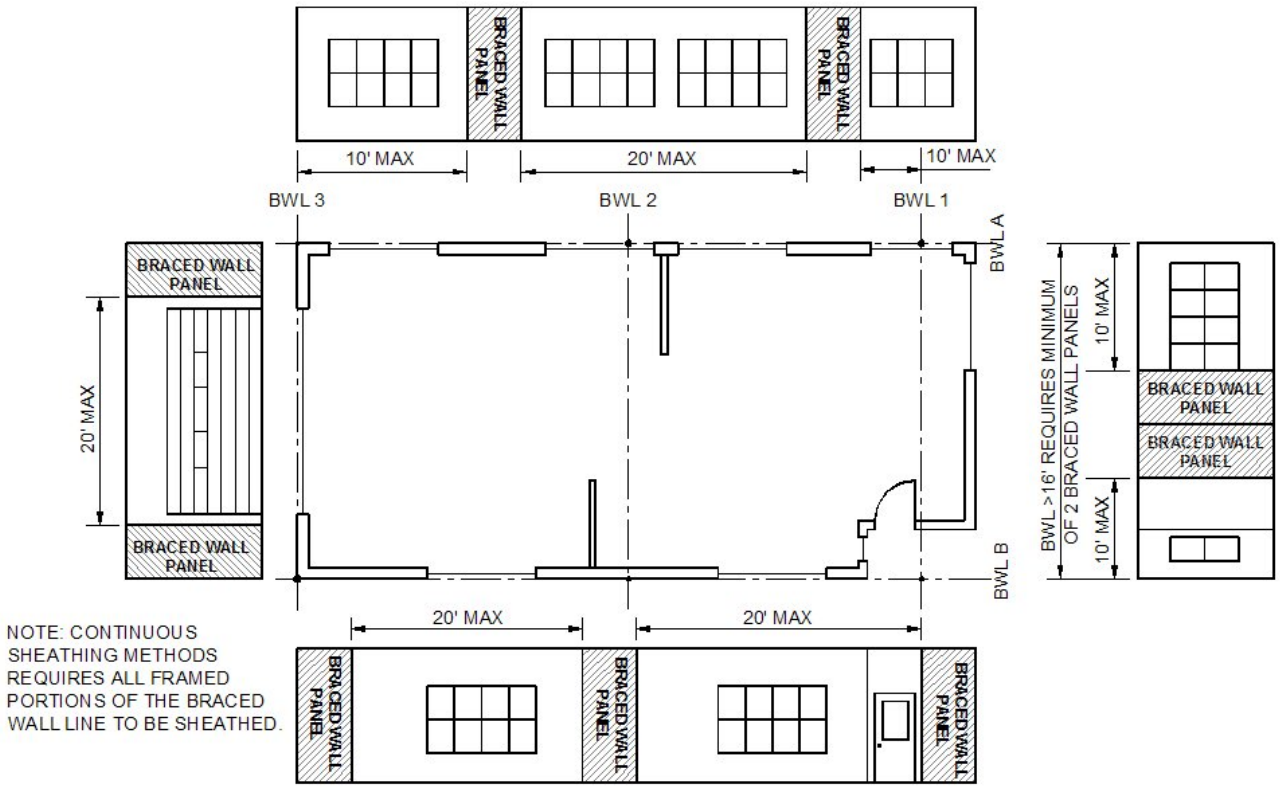
For SI: 1 foot = 304.8 mm.

FIGURE 602.10.1.4
ANGLED WALLS

R602.10.2 Braced wall panels. Braced wall panels shall be full-height sections of wall that shall have no vertical or horizontal offsets. Braced wall panels shall be constructed and placed along a braced wall line in accordance with this section and the bracing methods specified in Section R602.10.4.

R602.10.2.1 Braced wall panel uplift load path. The bracing lengths in Table R602.10.3(1) apply only when uplift loads are resisted per Section R602.3.5.

R602.10.2.2 Locations of braced wall panels. A braced wall panel shall begin within 10 feet (3810 mm) from each end of a braced wall line as determined in accordance with Section R602.10.1.1. The distance between adjacent edges of braced wall panels along a braced wall line shall be no greater than 20 feet (6096 mm) as shown in Figure R602.10.2.2.



For SI: 1 foot = 304.8 mm.

FIGURE 602.10.2.2
LOCATION OF BRACED WALL PANELS

R602.10.2.3 Minimum number of braced wall panels. Braced wall lines with a length of 16 feet (4877 mm) or less shall have a minimum of two braced wall panels of any length or one braced wall panel equal to 48 inches (1219 mm) or more. Braced wall lines greater than 16 feet (4877 mm) shall have a minimum of two braced wall panels.

R602.10.3 Required length of bracing. The required length of bracing along each braced wall line shall be determined as follows.

1. All buildings in Seismic Design Categories A and B shall use Table R602.10.3(1) and the applicable adjustment factors in Table R602.10.3(2).

2. Detached buildings in Seismic Design Category C shall use Table R602.10.3(1) and the applicable adjustment factors in Table R602.10.3(2).

3. Townhouses in Seismic Design Category C shall use the greater value determined from Table R602.10.3(1) or R602.10.3(3) and the applicable adjustment factors in Table R602.10.3(2) or R602.10.3(4) respectively.

Only braced wall panels parallel to the braced wall line within the 4 foot (1219 mm) offset permitted by Section R602.10.1.2 shall contribute towards the required length of bracing of that braced wall line. If a braced wall panel is located along an angled wall and meets the minimum length requirements of Tables R602.10.5 or R602.10.5.2, it shall be permitted to contribute its projected length towards the minimum required length of bracing for the braced wall line as shown in Figure R602.10.1.4. If a braced wall panel is located along an angled wall at the end of a braced wall line, it shall contribute its projected length for only one of the braced wall lines at the projected corner.

TABLE R602.10.3(1)
BRACING REQUIREMENTS BASED ON WIND SPEED

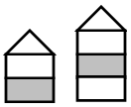
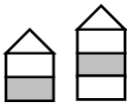
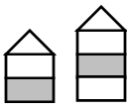
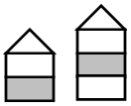
EXPOSURE CATEGORY B, 30 FT MEAN ROOF HEIGHT, 10 FT EAVE TO RIDGE HEIGHT, 2 BRACED WALL LINES			MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE[a]			
Basic Wind Speed (mph)	Story Location	Braced Wall Line Spacing (feet)	Method LIB[b]	Method GB	Methods DWB, WSP, SFB, PBS, PCP, HPS, CS-SFB[c]	Methods CS-WSP, CS-G, CS-PF
≤ 85		10	3.5	3.5	2.0	1.5
		20	6.0	6.0	3.5	3.0
		30	8.5	8.5	5.0	4.5
		40	11.5	11.5	6.5	5.5
		50	14.0	14.0	8.0	7.0
		60	16.5	16.5	9.5	8.0
		10	6.5	6.5	3.5	3.0
		20	11.5	11.5	6.5	5.5
		30	16.5	16.5	9.5	8.0
		40	21.5	21.5	12.5	10.5
		50	26.5	26.5	15.0	13.0
		60	31.5	31.5	18.0	15.5
		10	NP	9.0	5.5	4.5
		20	NP	17.0	10.0	8.5
		30	NP	24.5	14.0	12.0
		40	NP	32.0	18.0	15.5
		50	NP	39.0	22.5	19.0
		60	NP	46.5	26.5	22.5
≤ 90		10	3.5	3.5	2.0	2.0
		20	7.0	7.0	4.0	3.5
		30	9.5	9.5	5.5	5.0
		40	12.5	12.5	7.5	6.0
		50	15.5	15.5	9.0	7.5
		60	18.5	18.5	10.5	9.0
		10	7.0	7.0	4.0	3.5
		20	13.0	13.0	7.5	6.5
		30	18.5	18.5	10.5	9.0
		40	24.0	24.0	14.0	12.0
		50	29.5	29.5	17.0	14.5
		60	35.0	35.0	20.0	17.0
		10	NP	10.5	6.0	5.0
		20	NP	19.0	11.0	9.5
		30	NP	27.5	15.5	13.5
		40	NP	35.5	20.5	17.5
		50	NP	44.0	25.0	21.5
		60	NP	52.0	30.0	25.5

TABLE R602.10.3(1) (continued)
BRACING REQUIREMENTS BASED ON WIND SPEED

EXPOSURE CATEGORY B, 30 FT MEAN ROOF HEIGHT, 10 FT EAVE TO RIDGE HEIGHT, 2 BRACED WALL LINES			MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE[a]			
Basic Wind Speed (mph)	Story Location	Braced Wall Line Spacing (feet)	Method LIB[b]	Method GB	Methods DWB, WSP, SFB, PBS, PCP, HPS, CS-SFB[c]	Methods CS-WSP, CS-G, CS-PF
≤ 100		10	4.5	4.5	2.5	2.5
		20	8.5	8.5	5.0	4.0
		30	12.0	12.0	7.0	6.0
		40	15.5	15.5	9.0	7.5
		50	19.0	19.0	11.0	9.5
		60	22.5	22.5	13.0	11.0
		10	8.5	8.5	5.0	4.5
		20	16.0	16.0	9.0	8.0
		30	23.0	23.0	13.0	11.0
		40	29.5	29.5	17.0	14.5
		50	36.5	36.5	21.0	18.0
		60	43.5	43.5	25.0	21.0
		10	NP	12.5	7.5	6.0
		20	NP	23.5	13.5	11.5
		30	NP	34.0	19.5	16.5
		40	NP	44.0	25.0	21.5
		50	NP	54.0	31.0	26.5
		60	NP	64.0	36.5	31.0
< 110[c]		10	5.5	5.5	3.0	3.0
		20	10.0	10.0	6.0	5.0
		30	14.5	14.5	8.5	7.0
		40	18.5	18.5	11.0	9.0
		50	23.0	23.0	13.0	11.5
		60	27.5	27.5	15.5	13.5
		10	10.5	10.5	6.0	5.0
		20	19.0	19.0	11.0	9.5
		30	27.5	27.5	16.0	13.5
		40	36.0	36.0	20.5	17.5
		50	44.0	44.0	25.5	21.5
		60	52.5	52.5	30.0	25.5
		10	NP	15.5	9.0	7.5
		20	NP	28.5	16.5	14.0
		30	NP	41.0	23.5	20.0
		40	NP	53.0	30.5	26.0
		50	NP	65.5	37.5	32.0
		60	NP	77.5	44.5	37.5

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm.

a. Linear interpolation shall be permitted.

b. Method LIB shall have gypsum board fastened to at least one side with nails or screws per Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches (203 mm).

c. Method CS-SFB does not apply where the wind speed is greater than 100 mph.

TABLE R602.10.3(2)
WIND ADJUSTMENT FACTORS TO THE REQUIRED LENGTH OF WALL BRACING

ADJUSTMENT BASED ON	STORY/ SUPPORTING	CONDITION	ADJUSTMENT FACTOR [a,b] (multiply length from Table R602.10.3(1) by this factor)	APPLICABLE METHODS
Exposure category	One story structure	B	1.00	All methods
		C	1.20	
		D	1.50	
	Two-story structure	B	1.00	
		C	1.30	
		D	1.60	
	Three-story structure	B	1.00	
		C	1.40	
		D	1.70	
Roof eave-to-ridge height	Roof only	≤5 ft	0.70	
		10 ft	1.00	
		15 ft	1.30	
		20 ft	1.60	
	Roof + 1 floor	≤5 ft	0.85	
		10 ft	1.00	
		15 ft	1.15	
		20 ft	1.30	
	Roof + 2 floors	≤5 ft	0.90	
		10 ft	1.00	
		15 ft	1.10	
		20 ft	Not permitted	
Wall height adjustment	Any story	8 ft	0.90	
		9 ft	0.95	
		10 ft	1.00	
		11 ft	1.05	
		12 ft	1.10	
Number of braced wall lines (per plan direction)[C]	Any story	2	1.00	
		3	1.30	
		4	1.45	
		≥5	1.60	
Additional 800 lb hold-down device	Top story only	Fastened to the end studs of each braced wall panel and to the foundation or framing below	0.80	DWB, WSP, SFB, PBS, PCP, HPS
Interior gypsum board finish (or equivalent)	Any story	Omitted from inside face of braced wall panels	1.40	DWB, WSP, SFB,PBS, PCP, HPS, CS-WSP, CS-G, CS-SFB
Gypsum board fastening	Any story	4 in. o.c. at panel edges, including top and bottom plates, and all horizontal joints blocked	0.7	GB

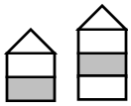
For SI: 1 foot = 305 mm, 1 pound force = 4.48 N.

a. Linear Interpolation shall be permitted.

b. The total adjustment factor is the product of all applicable adjustment factors.

c. The adjustment factor is permitted to be 1.0 when determing bracing amounts of intermediate braced wall lines provided the bracing amounts on adjacent braced wall lines are based on a spacing and number that neglects the intermediate braced wall line.

TABLE R602.10.3(3)
BRACING REQUIREMENTS BASED ON SEISMIC DESIGN CATEGORY

SOIL CLASS D[b] WALL HEIGHT = 10 FT 10 PSF FLOOR DEAD LOAD 15 PSF ROOF/CEILING DEAD LOAD BRACED WALL LINE SPACING ≤ 25 FT			MINIMUM TOTAL LENGTH (FEET) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE[a]				
Seismic Design Category (SDC)	**Story Location**	**Braced Wall Line Length (ft)**	**Method LIB[c]**	**Method GB**	**Methods DWB, SFB, PBS, PCP, HPS, CS-SFB**	**Method WSP**	**Methods CS-WSP, CS-G**
C (townhouses only)		10	2.5	2.5	2.5	1.6	1.4
		20	5.0	5.0	5.0	3.2	2.7
		30	7.5	7.5	7.5	4.8	4.1
		40	10.0	10.0	10.0	6.4	5.4
		50	12.5	12.5	12.5	8.0	6.8
		10	NP	4.5	4.5	3.0	2.6
		20	NP	9.0	9.0	6.0	5.1
		30	NP	13.5	13.5	9.0	7.7
		40	NP	18.0	18.0	12.0	10.2
		50	NP	22.5	22.5	15.0	12.8
		10	NP	6.0	6.0	4.5	3.8
		20	NP	12.0	12.0	9.0	7.7
		30	NP	18.0	18.0	13.5	11.5
		40	NP	24.0	24.0	18.0	15.3
		50	NP	30.0	30.0	22.5	19.1

For SI: 1 foot 305 mm

a. Linear interpolation shall be permitted.

b. Wall bracing lengths are based on a soil site class "D." Interpolation of bracing length between the Sds values associated with the Seismic Design Categories shall be permitted when a site-specific Sds value is determined in accordance with Section 1613.5 of the International Building Code.

c. Method LIB shall have gypsum board fastened to at least one side with nails or screws per Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum board. Spacing of fasteners at panel edges shall not exceed 8 inches (203 mm).

TABLE R602.10.3(4)
SEISMIC ADJUSTMENT FACTORS TO THE REQUIRED LENGTH OF WALL BRACING

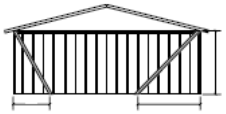
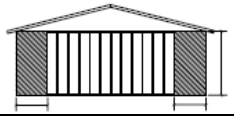
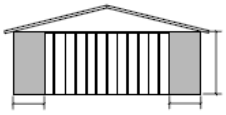
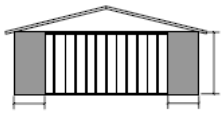
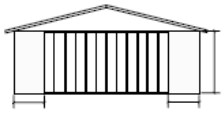
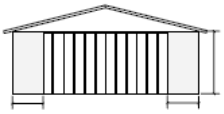
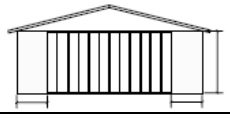
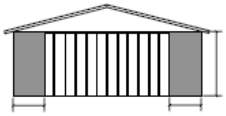
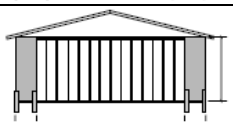
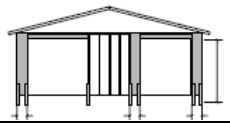
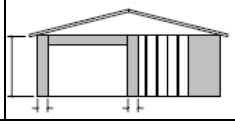
ADJUSTMENT BASED ON:	STORY/ SUPPORTING	CONDITION	ADJUSTMENT FACTOR[a,b] (multiply length from Table R602.10.3(3) by this factor)	APPLICABLE METHODS
Story height (Section 301.3)	Any story	≤10 ft	1.0	All methods
		>10 ft ≤ 12 ft	1.2	
Braced wall line spacing	Any story	≤35 ft	1.0	
		>35 ft ≤ 50 ft	1.43	
Wall dead load	Any story	> 8 psf < 15 psf	1.0	
		<8 psf	0.85	
Roof/ceiling dead load for wall supporting	Any story	≤15 psf	1.0	
	Roof plus one or two stories	>15 psf ≤ 25 psf	1.1	
	Roof only	>15 psf ≤ 25 psf	1.2	
Walls with stone or masonry veneer		1.0		
		1.5		
		1.5		
Interior gypsum board finish (or equivalent)	Any story	Omitted from inside face of braced wall panels	1.5	DWB, WSP, SFB, PBS, PCP, HPS, CS-WSP, CS-G, CS-SFB

For SI: 1 psf = 47.8 N/m.

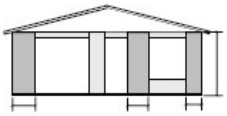
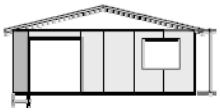
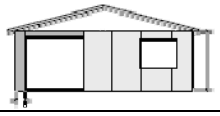
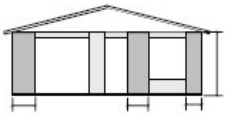
a. Linear interpolation shall be permitted.
b. The total length of bracing required for a given wall line is the product of all applicable adjustment factors.
c. The length-to-width ratio for the floor/roof diaphragm shall not exceed 3:1. The top plate lap splice nailing shall be a minimum of 12-16d nails on each side of the splice.
d. Applies to stone or masonry veneer exceeding the first story height.
e. The adjustment factor for stone or masonry veneer shall be applied to all exterior braced wall lines and all braced wall lines on the interior of the building.

R602.10.4 Bracing methods for braced wall panels. Braced wall panels shall be constructed in accordance with this section and the methods listed in Table R602.10.4.

TABLE R602.10.4
BRACING METHODS

METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA[a]	
				Fasteners	Spacing
Intermittent Bracing Methods	**LIB** Let-in-bracing	1x4 wood or approved metal straps at 45° to 60° angles for maximum 16" stud spacing		Wood: 2-8d common nails or 3-8d (2 ½" long x 0.113" dia.) nails	Wood: per stud and top and bottom plates
				Metal: per manufacturer	Metal: per manufacturer
	DWB Diagonal wood boards	¾" (1" nominal) for maximum 24" stud spacing		2-8d (2½" long x 0.113" dia.) nails or 2 - 1¾" long staples	Per stud
	WSP Wood structural panel (See Section R604)	$^3/_8$"		Exterior sheathing per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table R602.3(1) or R602.3(2)	Varies by fastener
	SFB Structural fiberboard sheathing	$^1/_2$" or $^{25}/_{32}$" for maximum 16" stud spacing		1½" long x 0.12" dia. (for ½ " thick sheathing) $1^3/_4$" long x 0.12" dia. (for $^{25}/_{32}$" thick sheathing) galvanized roofing nails or 8d common (2½" long x 0.131" dia.) nails	3" edges 6" field
	GB Gypsum board	$^1/_2$"		Nails or screws per Table R602.3(1) for exterior locations	For all braced wall panel locations: 7" edges (including top and bottom plates) 7" field
				Nails or screws per Table R702.3.5 for interior locations	
	PBS Particleboard sheathing (See Section R605)	$^3/_8$" or $^1/_2$" for maximum16" stud spacing		For $^3/_8$", 6d common (2" long x 0.113" dia.) nails For ½", 8d common (2½" long x 0.131" dia.) nails	3" edges 6" field
	PCP Portland cement plaster	See Section R703.6 for maximum 16" stud spacing		1½" long, 11 gage, $^7/_{16}$" dia. head nails or $^7/_8$" long, 16 gage staples	6" o.c. on all framing members
	HPS Hardboard panel siding	$^7/_{16}$" for maximum 16" stud spacing		0.092" dia., 0.225" dia. head nails with length to accommodate 1½" penetration into studs	4" edges 8" field
	ABW Alternate braced wall	$^3/_8$"		See Section R602.10.6.1	See Section R602.10.6.1
	PFH Portal frame with hold-downs	$^3/_8$		See Section R602.10.6.2	See Section R602.10.6.2
	PFG Portal frame at garage	$^7/_{16}$"		See Section R602.10.6.3	See Section R602.10.6.3

BRACING METHODS (continued)

METHODS, MATERIAL		MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA[a]	
				Fasteners	Spacing
Continuous Sheathing Methods	**CS-WSP** Continuously sheathed wood structural panel	$^3/_8$"		Exterior sheathing per Table R602.3(3)	6" edges 12" field
				Interior sheathing per Table R602.3(1) or R602.3(2)	Varies by fastener
	CS-G[b, c] Continuously sheathed wood structural panel adjacent to garage openings	$^3/_8$"		See Method CS-WSP	See Method CS-WSP
	CS-PF Continuously sheathed portal frame	$^7/_{16}$"		See Section R602.10.6.4	See Section R602.10.6.4
	CS-SFB[d] Continuously sheathed structural fiberboard	$^1/_2$" or $^{25}/_{32}$" for maximum 16" stud spacing		1½" long x 0.12" dia. (for ½ " thick sheathing) $1^3/_4$" long x 0.12" dia. (for $^{25}/_{32}$" thick sheathing) galvanized roofing nails or 8d common (2½" long x 0.131 dia.) nails	3" edges 6" field

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm.

a. Adhesive attachment of wall sheathing, including Method GB, shall not be permitted in townhouses in Seismic Design Category C.

b. Applies to panels next to garage door opening when supporting gable end wall or roof load only. May only be used on one wall of the garage.

c. Garage openings adjacent to a Method CS-G panel shall be provided with a header in accordance with Table R502.5(1). A full height clear opening shall not be permitted adjacent to a Method CS-G panel.

d. Method CS-SFB does not apply in areas where the wind speed exceeds 100 mph.

R602.10.4.1 Mixing methods. Mixing of bracing methods shall be permitted as follows:

1. Mixing intermittent bracing and continuous sheathing methods from story to story shall be permitted.

2. Mixing intermittent bracing methods from braced wall line to braced wall line within a story shall be permitted. In regions where the basic wind speed is less than or equal to 100 mph, mixing of intermittent bracing and continuous sheathing methods from braced wall line to braced wall line within a story shall be permitted.

3. Mixing intermittent bracing methods along a braced wall line shall be permitted in Seismic Design Categories A and B, and detached dwellings in Seismic Design Category C provided the length of required bracing in accordance with Table R602.10.3(1) or R602.10.3(3) is the highest value of all intermittent bracing methods used.

4. Mixing of continuous sheathing methods CS-WSP, CS-G and CS-PF along a braced wall line shall be permitted.

5. In Seismic Design Categories A and B, and for detached one- and two-family dwellings in Seismic Design Category C, mixing of intermittent bracing methods along the interior portion of a braced wall line with continuous sheathing methods CS-WSP, CS-G and CS-PF along the exterior portion of the same braced wall line shall be permitted. The length of required bracing shall be the highest value of all intermittent bracing methods used in accordance with Table R602.10.3(1) or R602.10.3(3) as adjusted by Tables R602.10.3(2) and R602.10.3(4), respectively. The requirements of Section R602.10.7 shall apply to each end of the continuously sheathed portion of the braced wall line.

R602.10.4.2 Continuous sheathing methods. Continuous sheathing methods require structural panel sheathing to be used on all sheathable surfaces on one side of a braced wall line including areas above and below openings and gable end walls and shall meet the requirements of Section R602.10.7.

R602.10.4.3 Braced wall panel interior finish material. Braced wall panels shall have gypsum wall board installed on the side of the wall opposite the bracing material. Gypsum wall board shall be not less than ½ inch (12.7 mm) in thickness and be fastened with nails or screws in accordance with Table R602.3(1) for exterior sheathing or Table R702.3.5 for interior gypsum wall board. Spacing of fasteners at panel edges for gypsum wall board opposite Method LIB bracing shall not exceed 8 inches (203 mm). Interior finish material shall not be glued in townhouses in Seismic Category C.

Exceptions:

1. Interior finish material is not required opposite wall panels that are braced in accordance with Method GB, ABW, PFH, PFG and CS-PF, unless otherwise required by Section R302.6.

2. An approved interior finish material with an in-plane shear resistance equivalent to gypsum board shall be permitted to be substituted, unless otherwise required by Section R302.6.

3. Except for Method LIB, gypsum wall board is permitted to be omitted provided the required length of bracing in Tables R602.10.3(1) and R602.10.3(3) is multiplied by the appropriate adjustment factor in Tables R602.10.3(2) and R602.10.3(4) respectively, unless otherwise required by Section R302.6.

R602.10.5 Minimum length of a braced wall panel. The minimum length of a braced wall panel shall comply with Table R602.10.5. For Methods CS-WSP and CS-SFB, the minimum panel length shall be based on the vertical dimension of the adjacent opening in accordance with Table R602.10.5 and Figure R602.10.5. When a panel has openings on either side of differing heights, the larger vertical dimension shall be used to determine the minimum braced wall panel length.

R602.10.5.1 Contributing length. For purposes of complying with the required length of bracing in Tables R602.10.3(1) and R602.10.3(3), the contributing length of each braced wall panel to the total length of bracing shall be as specified in Table R602.10.5.

TABLE R602.10.5
MINIMUM LENGTH OF BRACED WALL PANELS

METHOD (See Table R602.10.4)		MINIMUM LENGTH[a] (in) Wall Height					CONTRIBUTING LENGTH (in)
		8 ft	9 ft	10 ft	11 ft	12 ft	
DWG, WSP, SFB, PBS, PCP, HPS		48	48	48	53	58	Actual[b]
GB		48	48	48	53	58	Double sided = Actual Single sided = 0.5 x Actual
LIB		55	62	69	NP	NP	Actual[b]
ABW		28	32	34	38	42	48
PFH	Supporting roof only	16	16	16	18[c]	20[c]	48
	Supporting one story and roof	24	24	24	27[c]	29[c]	48
PFG		24	27	30	33[c]	36[c]	1.5 x Actual[b]
CS-G		24	27	30	33	36	Actual[b]
CS-PF		16	18	20	22[c]	24[c]	Actual[b]
CS-WSP, CS-SFB	Adjacent opening vertical dimension (in)						
	≤ 64	24	27	30	33	36	Actual[b]
	68	26	27	30	33	36	
	72	27	27	30	33	36	
	76	30	29	30	33	36	
	80	32	30	30	33	36	
	84	35	32	32	33	36	
	88	38	35	33	33	36	
	92	43	37	35	35	36	
	96	48	41	38	36	36	
	100		44	40	38	38	
	104		49	43	40	39	
	108		54	46	43	41	
	112			50	45	43	
	116			55	48	45	
	120			60	52	48	
	124				56	51	
	128				61	54	
	132				66	58	
	136					62	
	140					66	
	144					72	

For SI: 1 inch = 25.4 mm
NP = Not permitted
a. Linear interpolation shall be permitted.
b. Use the actual length provided it is greater than or equal to the minimum length.
c. Maximum header height is 10’; however, wall height may be increased to 12’ with a pony wall per Table R602.10.6.4.

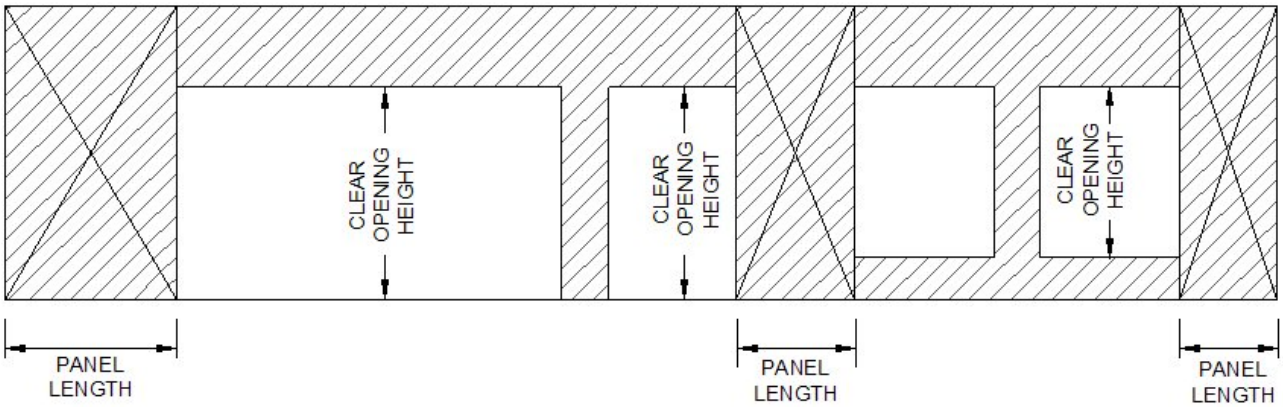


FIGURE R602.10.5
BRACED WALL PANELS WITH CONTINUOUS SHEATHING

R602.10.5.2 Partial credit. For Methods DWB, WSP, SFB, PBS, PCP and HPS panels between 36 inches and 48 inches in length shall be considered a braced wall panel and shall be permitted to partially contribute towards the required length of bracing in Table R602.10.3(1) and R602.10.3(3), and the contributing length shall be determined from Table R602.10.5.2.

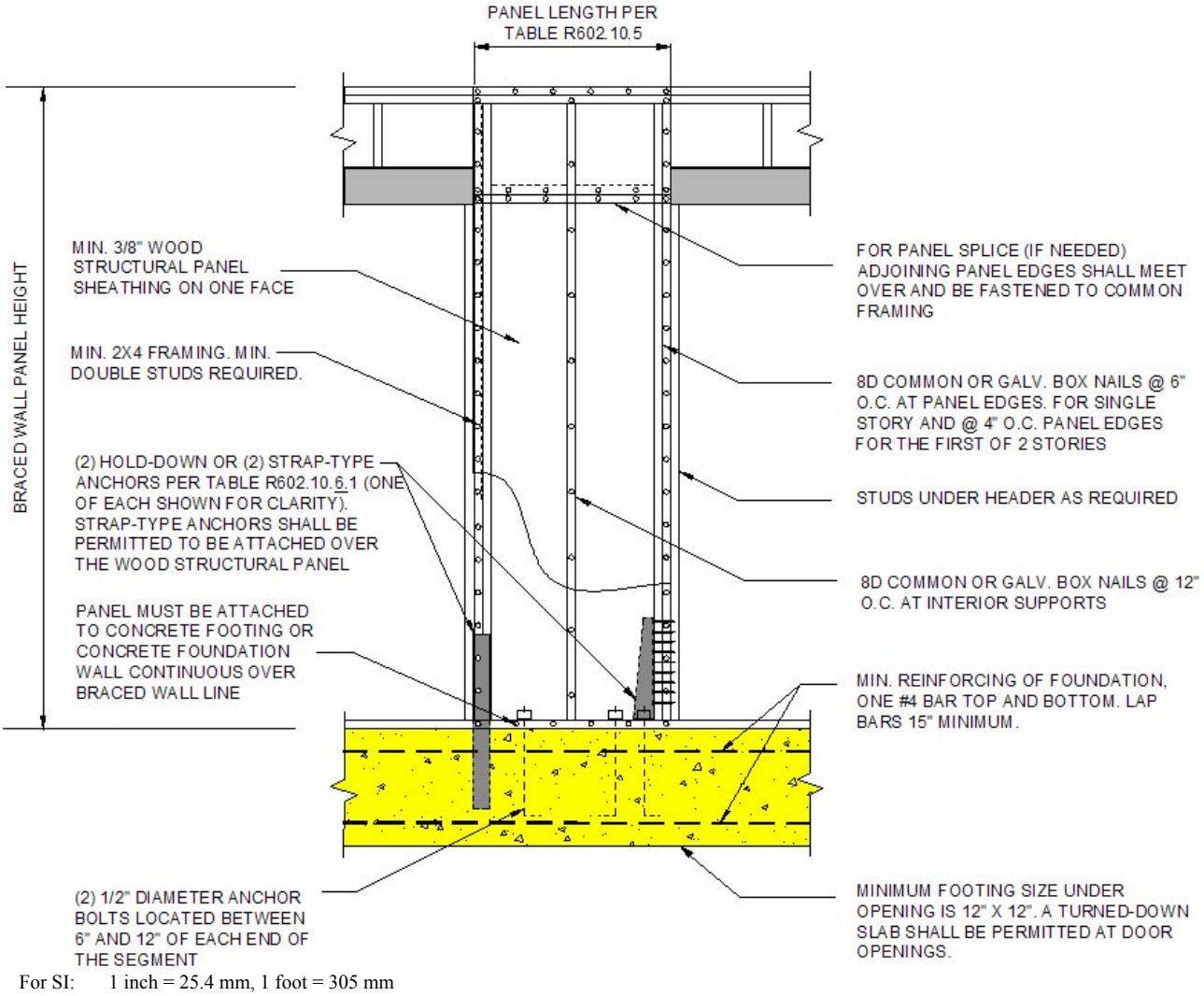
TABLE R602.10.5.2
PARTIAL CREDIT FOR BRACED WALL PANELS LESS THAN 48 INCHES IN ACTUAL LENGTH

ACTUAL LENGTH OF BRACED WALL PANEL (in)	CONTRIBUTING LENGTH OF BRACED WALL PANEL (in)[a]	
	8 ft Wall Height	9 ft Wall Height
48	48	48
42	36	36
36	27	N/A

For SI: 1 inch = 25.4mm
a. Linear interpolation shall be permitted.

R602.10.6 Construction of Methods ABW, PFH, PFG and CS-PF. Methods ABW, PFH, PFG and CS-PF shall be constructed as specified in Sections R602.10.6.1 through R602.10.6.4.

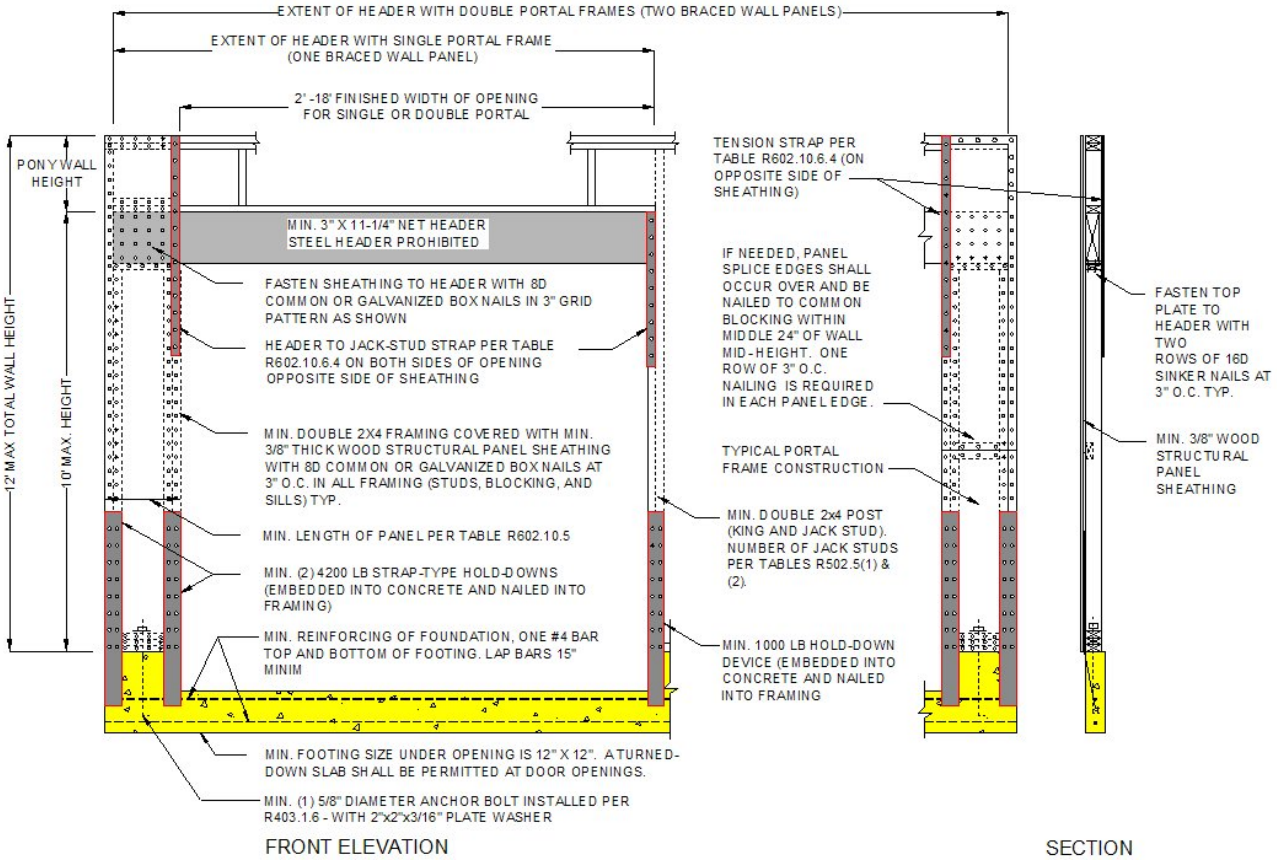
R602.10.6.1 Method ABW: Alternate braced wall panels. Method ABW braced wall panels shall be constructed in accordance with Figure R602.10.6.1.



For SI: 1 inch = 25.4 mm, 1 foot = 305 mm

FIGURE R602.10.6.1
METHOD ABW: ALTERNATE BRACED WALL PANEL

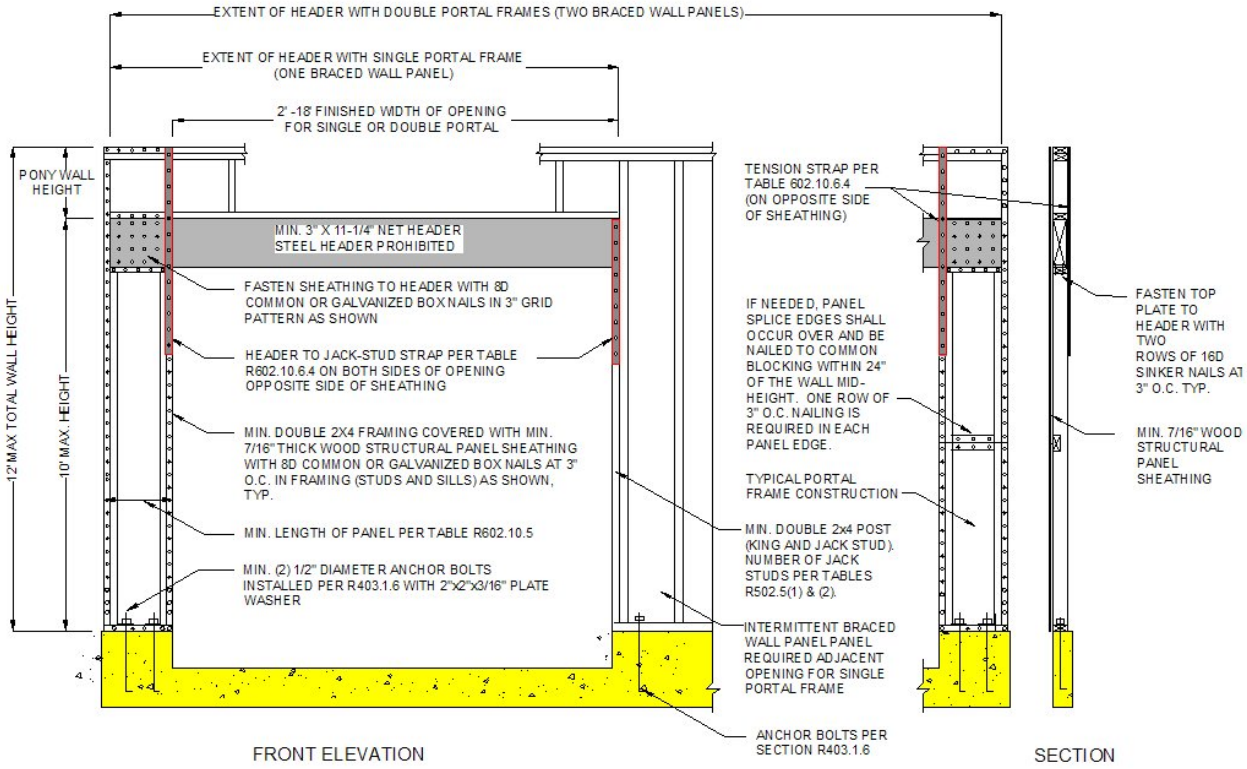
R602.10.6.2 Method PFH: Portal frame with hold-downs. Method PFH braced wall panels shall be constructed in accordance with Figure R602.10.6.2.



For SI: 1 inch = 25.4 mm, 1 foot = 305 mm

FIGURE R602.10.6.2
METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS

R602.10.6.3 Method PFG: Portal frame at garage door openings. Where supporting a roof or one story and a roof, a Method PFG braced wall panel constructed in accordance with Figure R602.10.6.3 shall be permitted on either side of garage door openings.



For SI: 1 inch = 25.4 mm, 1 foot = 305 mm

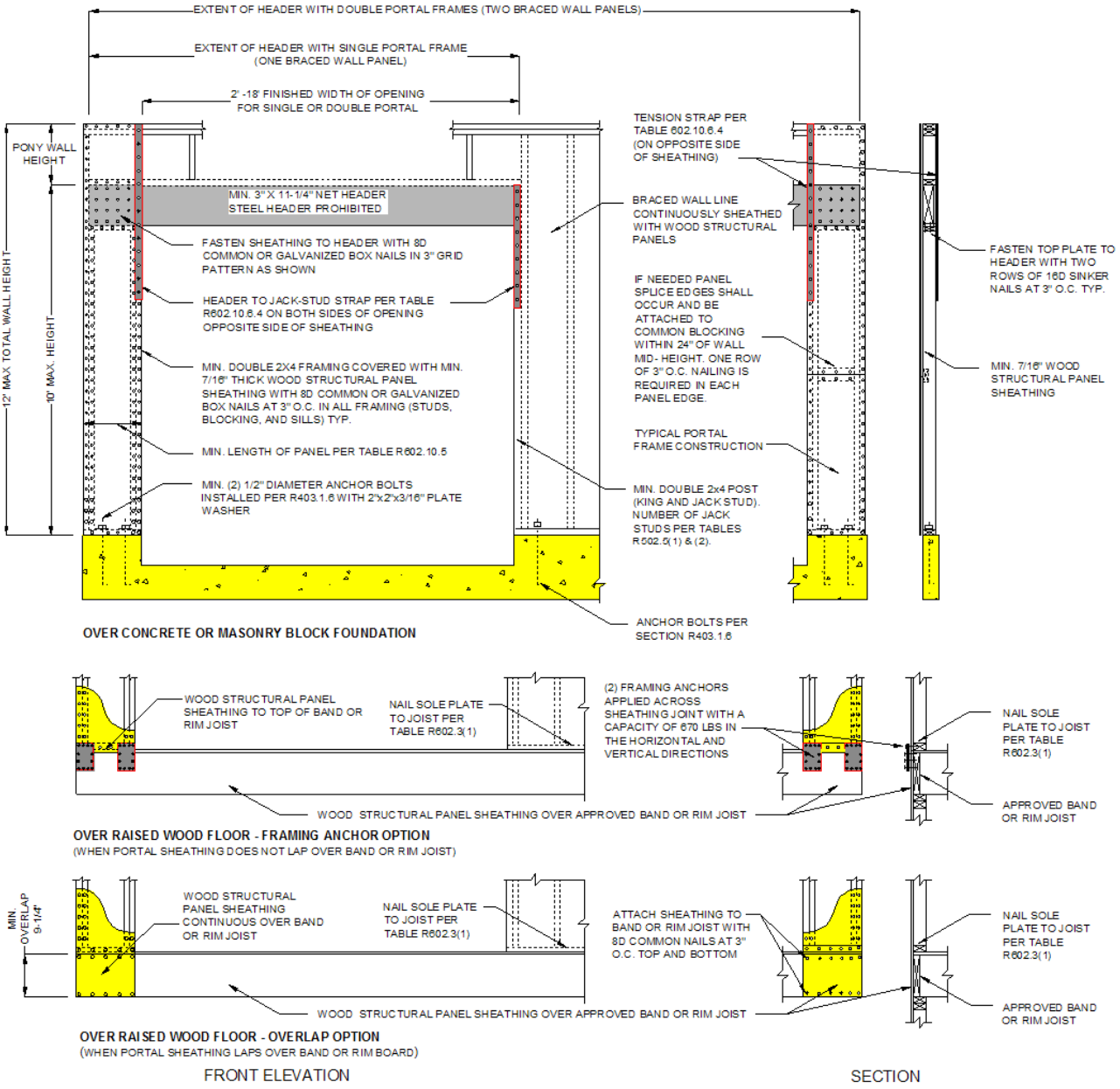
FIGURE R602.10.6.3
METHOD PFG: PORTAL FRAME AT GARAGE DOOR OPENINGS IN SEISMIC DESIGN CATEGORIES A, B AND C

R602.10.6.4 Method CS-PF: Continuously sheathed portal frame. Continuously sheathed portal frame braced wall panels shall be constructed in accordance with Figure R602.10.6.4 and Table R602.10.6.4. The number of continuously sheathed portal frame panels in a single braced wall line shall not exceed four.

TABLE R602.10.6.4
TENSION STRAP CAPACITY REQUIRED FOR RESISTING WIND PRESSURES PERPENDICULAR TO METHOD PFH, PFG AND CS-PF BRACED WALL PANELS

MINIMUM WALL STUD FRAMING NOMINAL SIZE AND GRADE	MAXIMUM PONY WALL HEIGHT (ft)	MAXIMUM TOTAL WALL HEIGHT (ft)	MAXIMUM OPENING WIDTH (ft)	TENSION STRAP CAPACITY REQUIRED (lb)[a]					
				BASIC WIND SPEED (mph)					
				85	90	100	85	90	100
				Exposure B			Exposure C		
2x4 No. 2 Grade	0	10	18	1000	1000	1000	1000	1000	1000
	1	10	9	1000	1000	1000	1000	1000	1275
			16	1000	1000	1750	1800	2325	3500
			18	1000	1200	2100	2175	2725	DR
	2	10	9	1000	1000	1025	1075	1550	2500
			16	1525	2025	3125	3200	3900	DR
			18	1875	2400	3575	3700	DR	DR
	2	12	9	1000	1200	2075	2125	2750	4000
			16	2600	3200	DR	DR	DR	DR
			18	3175	3850	DR	DR	DR	DR
	4	12	9	1775	2350	3500	3550	DR	DR
			16	4175	DR	DR	DR	DR	DR
2x6 Stud Grade	2	12	9	1000	1000	1325	1375	1750	2550
			16	1650	2050	2925	3000	3550	DR
			18	2025	2450	3425	3500	4100	DR
	4	12	9	1125	1500	2225	2275	2775	3800
			16	2650	3150	DR	DR	DR	DR
			18	3125	3675	DR	DR	DR	DR

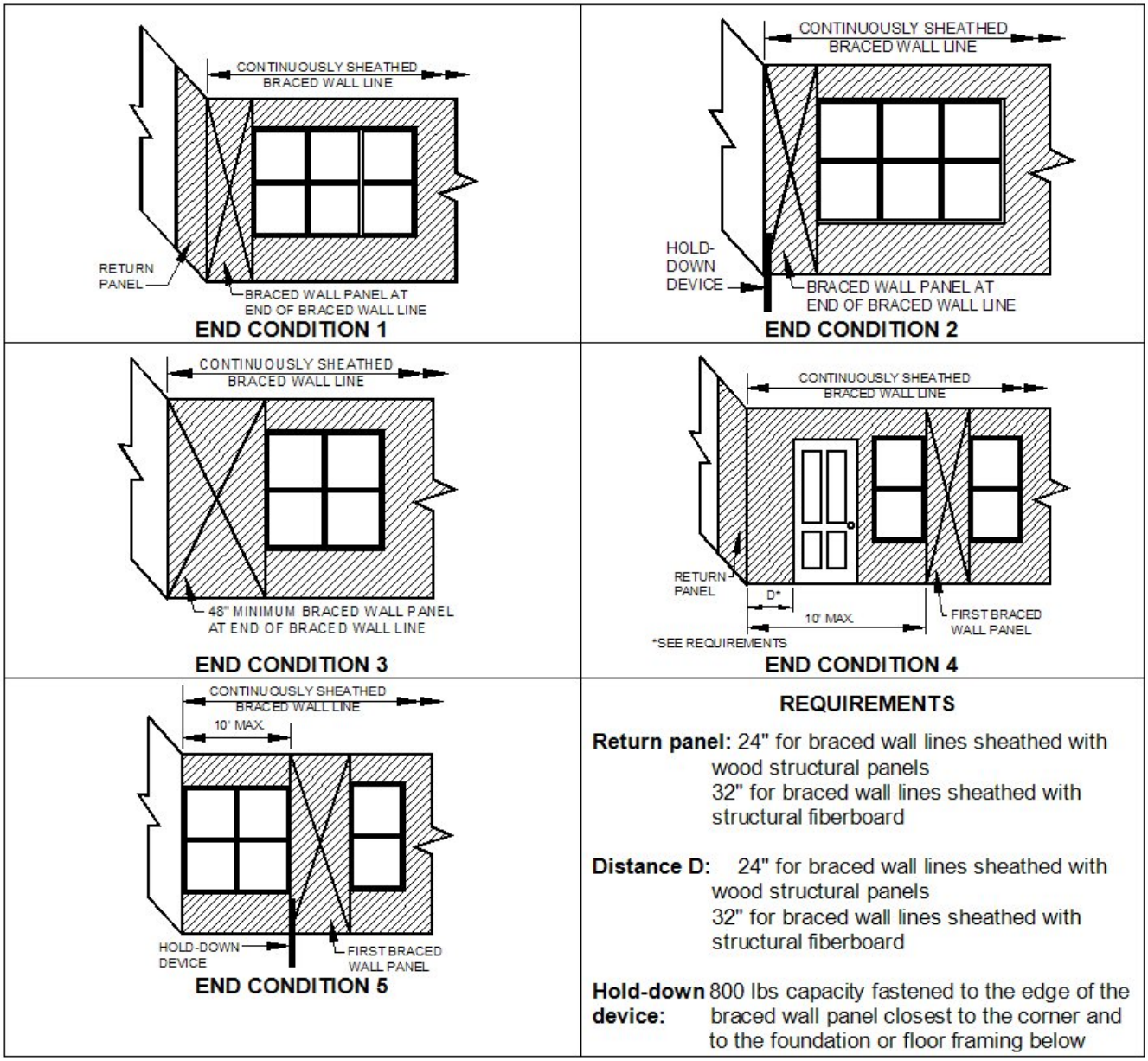
For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 pound force = 4.48 N
DR = design required
a. Strap shall be installed in accordance with manufacturer's recommendations.



For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 pound force = 4.48 N

FIGURE R602.10.6.4
METHOD CS-PF: CONTINUOUSLY SHEATHED PORTAL FRAME PANEL CONSTRUCTION

R602.10.7 Ends of braced wall lines with continuous sheathing. Each end of a braced wall line with continuous sheathing shall be in accordance with one of the end conditions shown in Figure R602.10.7.



For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 pound force = 4.48 N

FIGURE R602.10.7
END CONDITIONS FOR BRACED WALL LINES WITH CONTINUOUS SHEATHING

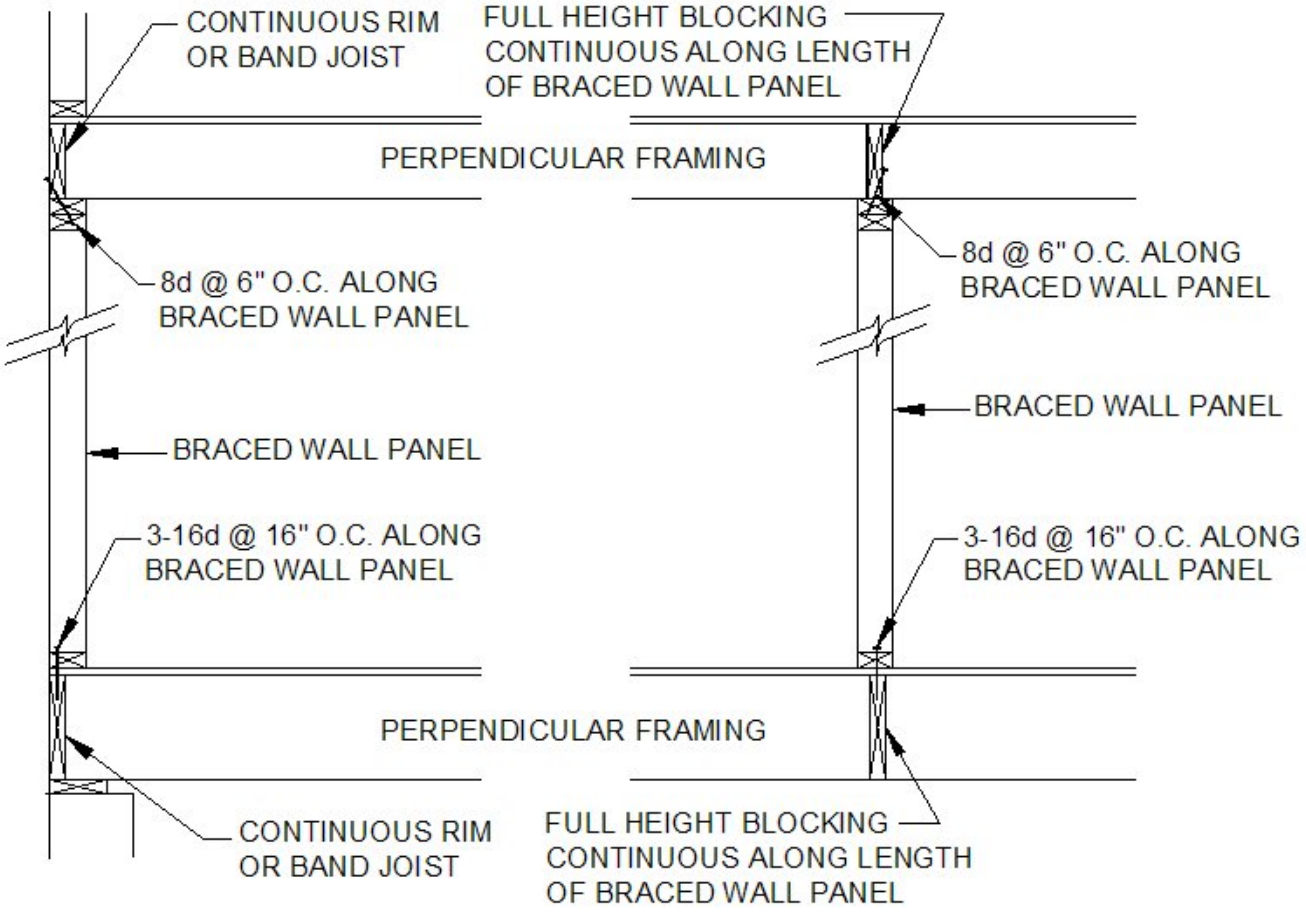
R602.10.8 Braced wall panel connections. Braced wall panels shall be connected to floor framing or foundations as follows:

1. Where joists are perpendicular to a braced wall panel above or below, a rim joist, band joist or blocking shall be provided along the entire length of the braced wall panel in accordance with Figure R602.10.8(1). Fastening of top and bottom wall plates to framing, rim joist, band joist and/or blocking shall be in accordance with Table R602.3(1).

2. Where joists are parallel to a braced wall panel above or below, a rim joist, end joist or other parallel framing member shall be provided directly above and below the braced wall panel in accordance with Figure R602.10.8(2). Where a parallel framing member cannot be located directly above and below the panel, full-depth blocking at 16 inch (406 mm) spacing shall be provided between the parallel framing members to each side of the braced wall panel in

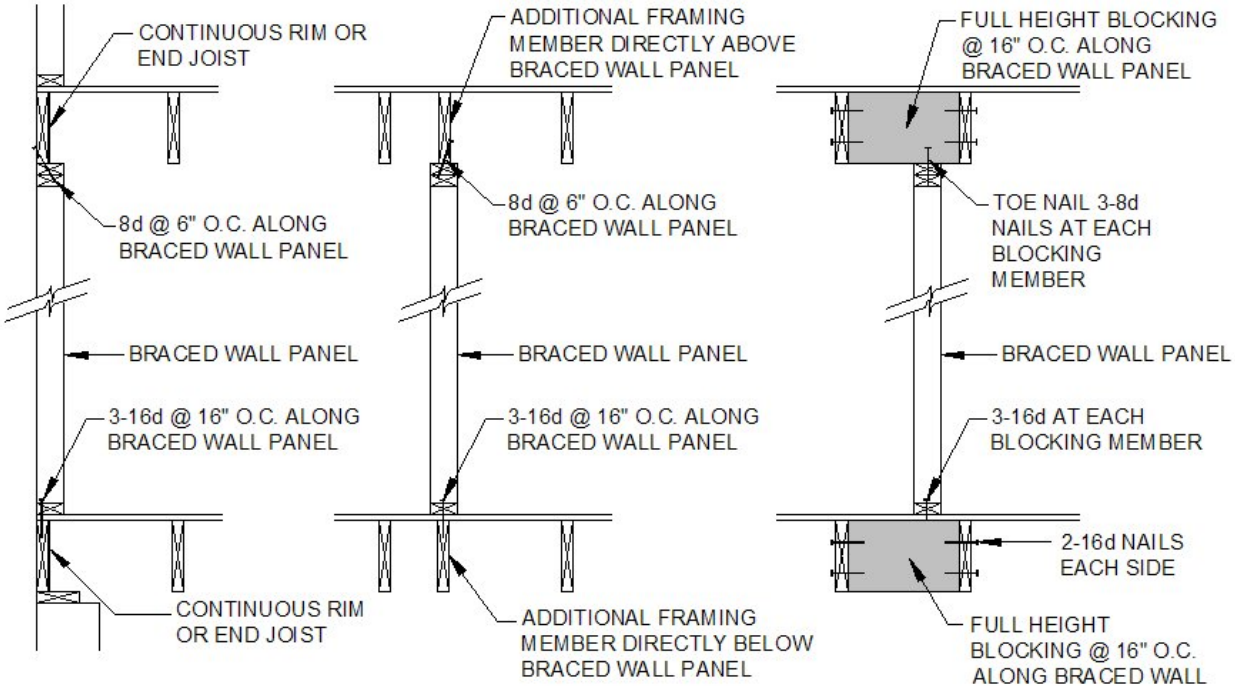
accordance with Figure R602.10.8(2). Fastening of blocking and wall plates shall be in accordance with Table R602.3(1) and Figure R602.10.8(2).

3. Connections of braced wall panels to concrete or masonry shall be in accordance with Section R403.1.6.



For SI: 1 inch = 25.4 mm

FIGURE R602.10.8(1)
BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING



For SI: 1 inch = 25.4 mm

FIGURE R602.10.8(2)
BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING

R602.10.8.1 Connections to roof framing. Top plates of exterior braced wall panels shall be attached to rafters or roof trusses above in accordance with Table R602.3(1) and this section. Where required by this section, blocking between rafters or roof trusses shall be attached to top plates of braced wall panels and to rafters and roof trusses in accordance with Table R602.3(1). A continuous band, rim, or header joist or roof truss parallel to the braced wall panels shall be permitted to replace the blocking required by this section. Blocking shall not be required over openings in continuously-sheathed braced wall lines. In addition to the requirements of this section, lateral support shall be provided for rafters and ceiling joists in accordance with Section R802.8 and for trusses in accordance with Section R802.10.3. Roof ventilation shall be provided in accordance with Section R806.1.

1. For wind speeds less than 100 mph (45 m/s):

   1.1. Where the distance from the top of the braced wall panel to the top of the rafters or roof trusses above is 9.25 inches (235 mm) or less, blocking between rafters or roof trusses shall not be required.

   1.2. Where the distance from the top of the braced wall panel to the top of the rafters or roof trusses above is between 9.25 inches (235 mm) and 15.25 inches (387 mm) blocking between rafters or roof trusses shall be provided above the braced wall panel in accordance with Figure R602.10.8.1(1).

2. For wind speeds of 100 mph (45 m/s) or greater, where the distance from the top of the braced wall panel to the top of the rafters or roof trusses is 15.25 inches (387 mm) or less, blocking between rafters or roof trusses shall be provided above the braced wall panel in accordance with Figure R602.10.8.1(1).

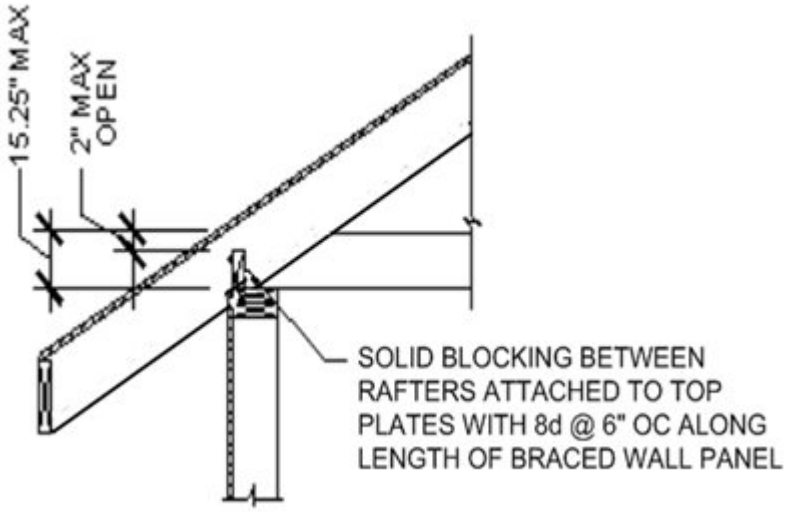
3. Where the distance from the top of the braced wall panel to the top of the rafters or roof trusses exceeds 15.25 inches (387 mm), the top plate of the braced wall panel shall be connected to perpendicular rafters or roof trusses above in accordance with one or more of the following methods:

   3.1. Soffit blocking panels constructed per Figure R602.10.8.1(2).

   3.2. Vertical blocking panels constructed per Figure R602.10.8.1(3).

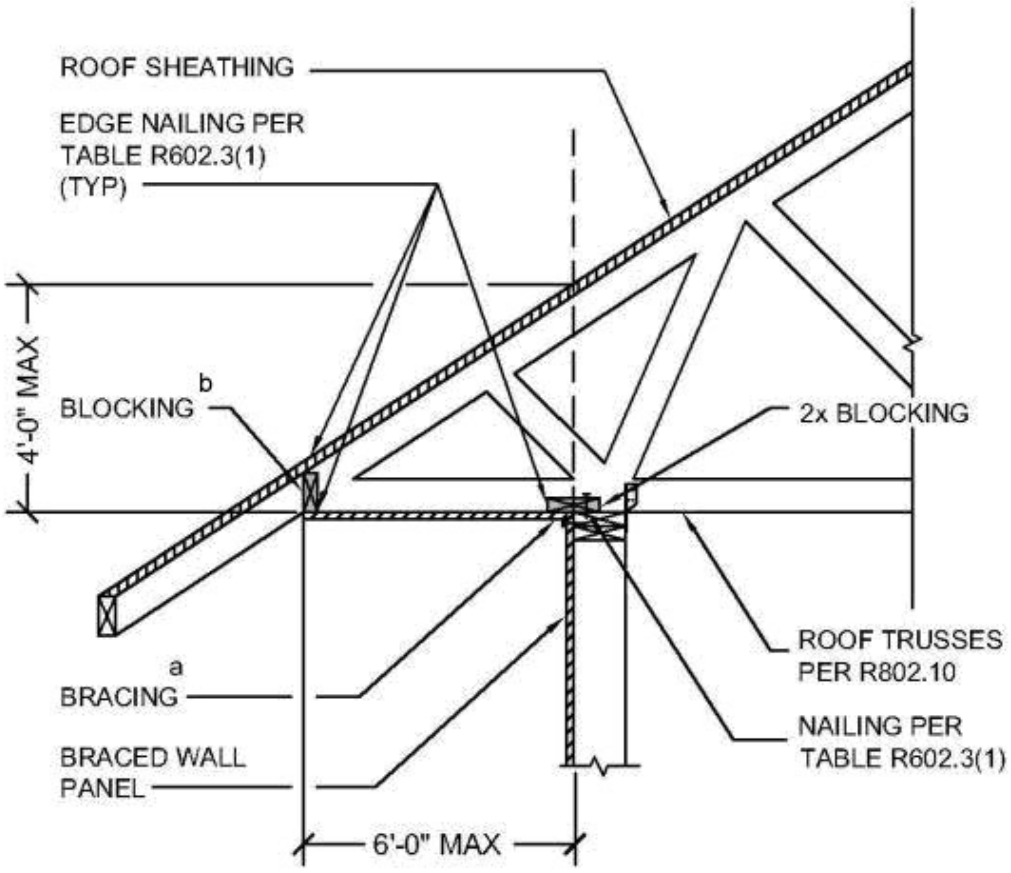
   3.3. Full-height engineered blocking panels designed per the AF&PA WFCM.

   3.4. Blocking, blocking panels, or other methods of lateral load transfer designed in accordance with accepted engineering practice.



For SI: 1 inch = 25.4 mm

FIGURE R602.10.8.1(1)
BRACED WALL PANEL CONNECTION TO PERPENDICULAR RAFTERS



For SI: 1 inch = 25.4 mm

a. Methods of bracing shall be as described in Section R602.10.4

b. Provide ventilation (not shown) per Section R806.

FIGURE R602.10.8.1(2)
BRACED WALL PANEL CONNECTION OPTION TO PERPENDICULAR RAFTERS OR ROOF TRUSSES

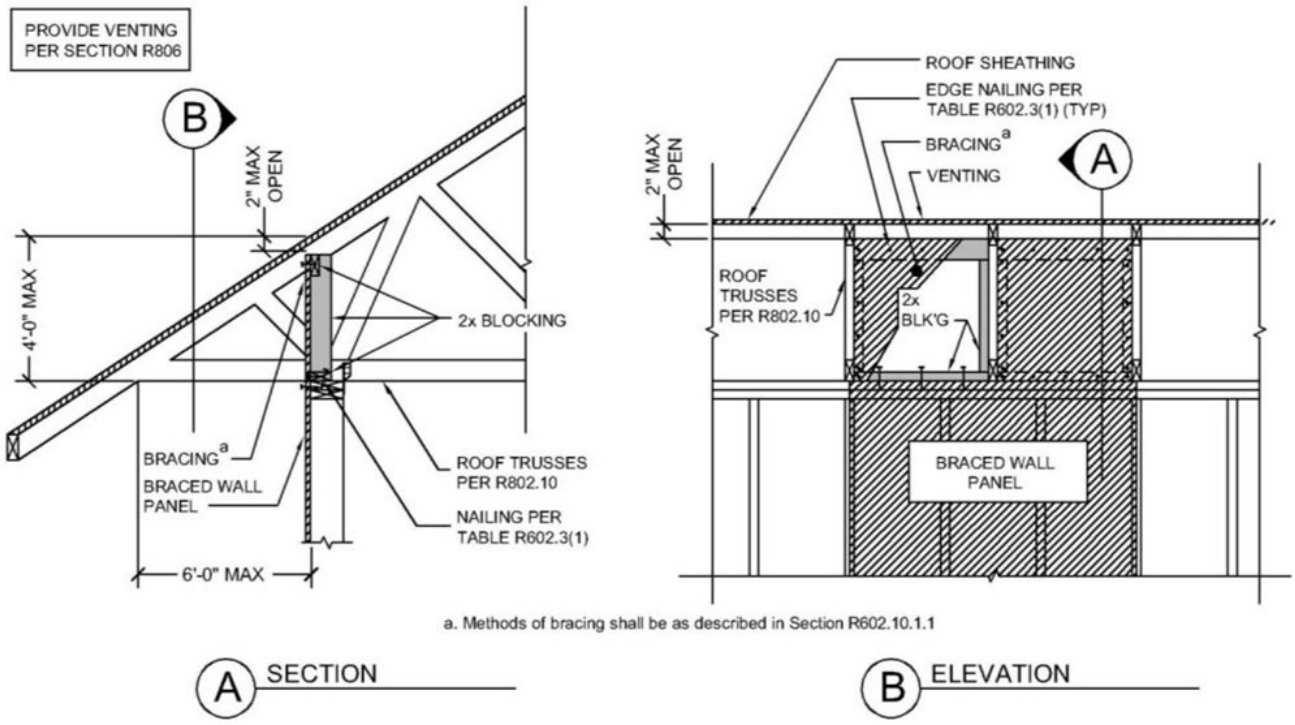


FIGURE R602.10.8.1(3)
BRACED WALL PANEL CONNECTION OPTION TO PERPENDICULAR RAFTERS OR ROOF TRUSSES

R602.10.9 Braced wall panel support. Braced wall panel support shall be provided as follows:

1. Cantilevered floor joists complying with Section R502.3.3 shall be permitted to support braced wall panels.

2. Elevated post or pier foundations supporting braced wall panels shall be designed in accordance with accepted engineering practice.

3. Masonry stem walls less than 48 inches (1220 mm) in length that support braced wall panels shall be reinforced in accordance with Figure R602.10.9. Masonry stem walls with a length greater than or equal to 48 inches (1220 mm) supporting braced wall panels shall be constructed in accordance with Section R403.1. Methods ABW and PFH shall not be permitted to attach to masonry stem walls.

4. Concrete stem walls less than 48 inches (1220 mm) in length, greater than 12 inches (305 mm) tall and less than 6 inches (152 mm) thick shall have reinforcement sized and located in accordance with Figure R602.10.9.

Exception: As an alternative to the Optional Stem Wall Reinforcement in Fig. R602.10.9, an approved post-installed adhesive anchoring system shall be permitted. A minimum of two anchors shall be installed as indicated in Figure R602.10.9. Anchors shall be located not more than 4 inches (102 mm) from each end of the stem wall. Anchors shall be installed into the concrete footing as follows:

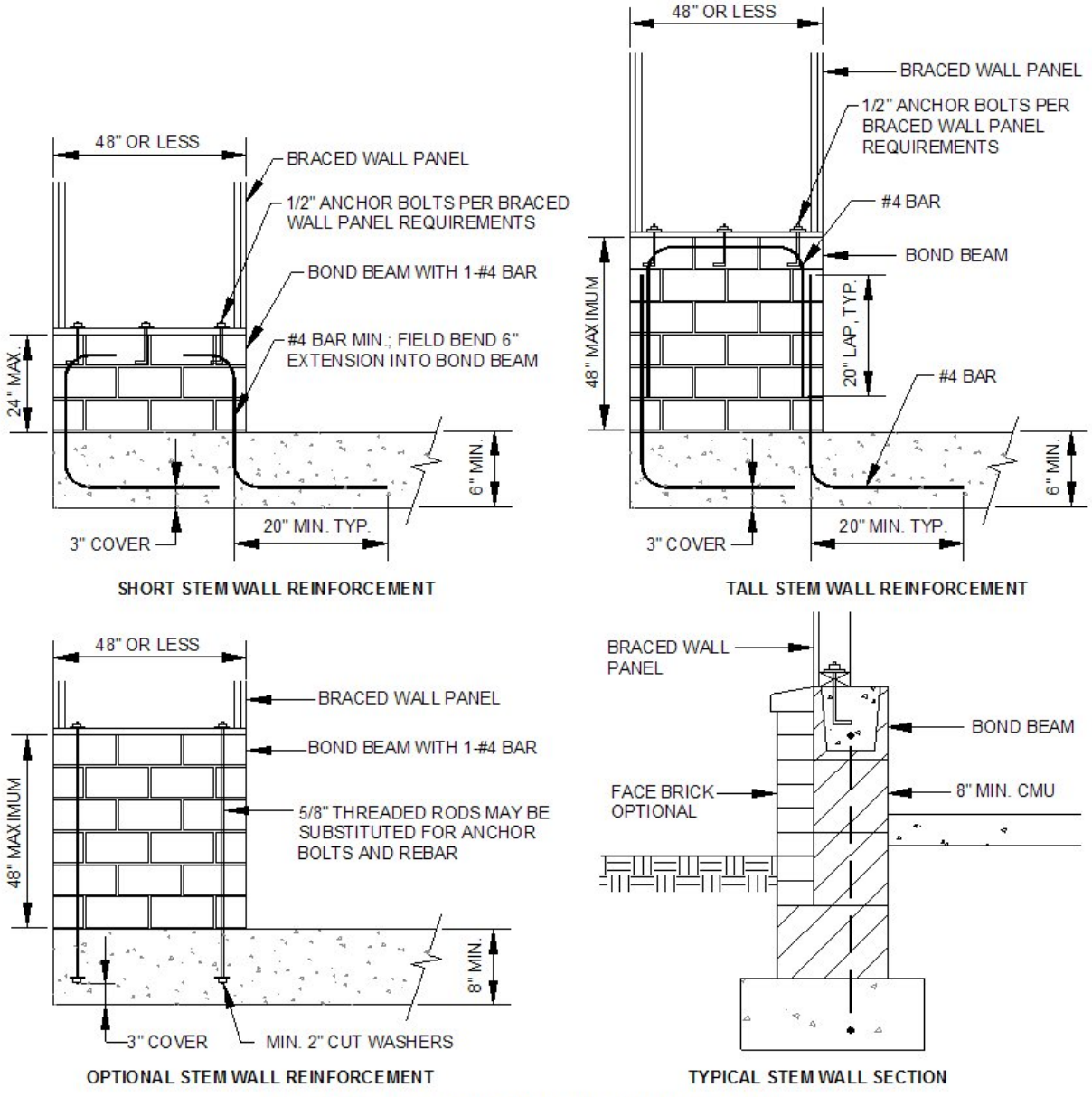
1. 5/8 inch (16 mm) threaded rod – 3/4 inch (19 mm) diameter hole with a minimum embedment of 6 inches (152 mm).

2. No. 4 reinforcing bar – 5/8 inch (16 mm) diameter hole with a minimum embedment of 4 1/2 inches (114 mm).

A minimum footing thickness of 8 inches (203 mm) is required and the minimum distance from each anchor to the edge of the footing shall be 3 3/4 (95 mm).

The anchoring adhesive and anchors shall be installed in accordance with the manufacturer's instructions and have a minimum tensile capacity of 5,000 lbs (22 kN).

The reinforcement of the masonry stem wall and attachment of the braced wall panel to the stem wall shall be as shown in Figure R602.10.9.



For SI: 1 inch = 25.4 mm

FIGURE R602.10.9
MASONRY STEM WALLS SUPPORTING BRACED WALL PANELS

R602.10.10 Panel joints. All vertical joints of panel sheathing shall occur over, and be fastened to common studs. Horizontal joints in braced wall panels shall occur over, and be fastened to common blocking of a minimum 1-1/2 inch (38 mm) thickness.

Exceptions:

1. Vertical joints of panel sheathing shall be permitted to occur over double studs, where adjoining panel edges are attached to separate studs with the required panel edge fastening schedule, and the adjacent studs are attached together with 2 rows of 10d box nails (3 in. long x 0.128 in. dia.) at 10 inches (254 mm) o.c.

2. Blocking at horizontal joints shall not be required in wall segments that are not counted as braced wall panels.

3. Where the length of bracing provided is at least twice the required length of bracing from Tables R602.10.3(1) and R602.10.3(3) blocking at horizontal joints shall not be required in braced wall panels constructed using Methods WSP, SFB, GB, PBS or HPS.

4. When Method GB panels are installed horizontally, blocking of horizontal joints is not required.

R602.10.11 Cripple wall bracing. Cripple walls shall be constructed in accordance with Section R602.9 and braced in accordance with this section. Cripple walls shall be braced with the length and method of bracing used for the wall above in accordance with Tables R602.10.3(1) and R602.10.3(3), except that the length of cripple wall bracing shall be multiplied by a factor of 1.15.

R602.10.11.1 Cripple wall bracing for townhouses in Seismic Design Category C. In addition to the requirements in Section R602.10.11, the distance between adjacent edges of braced wall panels shall be 14 feet (4267 mm) maximum.

Where braced wall lines at interior walls are not supported on a continuous foundation below, the adjacent parallel cripple walls, where provided, shall be braced with Method WSP or CS-WSP per Section R602.10.4. The length of bracing required per Table R602.10.3(3) for the cripple walls shall be multiplied by 1.5. Where the cripple walls do not have sufficient length to provide the required bracing, the spacing of panel edge fasteners shall be reduced to 4 inches (102 mm) on center and the required bracing length adjusted by 0.7. If the required length can still not be provided, the cripple wall shall be designed in accordance with accepted engineering practice.

R602.10.11.2 Redesignation of cripple walls. Where all cripple wall segments along a braced wall line do not exceed 48 inches (1220 mm) in height, the cripple wall shall be permitted to be redesignated as a first story wall for purposes of determining wall bracing requirements. Where any cripple wall segment in a braced wall line exceeds 48 inches (1220 mm) in height, the entire cripple wall shall be counted as an additional story. If the cripple walls are redesignated, the stories above the redesignated story shall be counted as the second and third stories respectively.

50. Change Section R602.11.1 to read:

602.11.1 Wall anchorage for townhouses in Seismic Design Category C. Plate washers, a minimum of 0.229 inch by 3 inches by 3 inches (5.8 mm by 76 mm by 76 mm) in size, shall be provided between the foundation sill plate and the nut except where approved anchor straps are used. The hole in the plate washer is permitted to be diagonally slotted with a width of up to 3/16 inch (5 mm) larger than the bolt diameter and a slot length not to exceed 1¾ inches (44 mm), provided a standard cut washer is placed between the plate washer and the nut.

51. Delete Section R602.11.2.

52. Replace Section R602.12, including all subsections, with the following:

R602.12 Simplified wall bracing. Buildings meeting all of the conditions listed below shall be permitted to be braced in accordance with this section as an alternate to the requirements of Section R602.10. The entire building shall be braced in accordance with this section; the use of other bracing provisions of R602.10, except as specified herein, shall not be permitted.

1. There shall be no more than two stories above the top of a concrete or masonry foundation or basement wall. Permanent wood foundations shall not be permitted.

2. Floors shall not cantilever more than 24 inches (607 mm) beyond the foundation or bearing wall below.

3. Wall height shall not be greater than 10 feet (2743 mm).

4. The building shall have a roof eave-to-ridge height of 15 feet (4572 mm) or less.

5. All exterior walls shall have gypsum board with a minimum thickness of 1/2 inches (12.7 mm) installed on the interior side fastened in accordance with Table R702.3.5.

6. The structure shall be located where the basic wind speed is less than or equal to 90 mph (40 m/s), and the Exposure Category is A or B.

7. The structure shall be located in Seismic Design Category of A, B or C for detached one- and two-family dwellings or Seismic Design Category A or B for townhouses.

8. Cripple walls shall not be permitted in two-story buildings.

R602.12.1 Circumscribed rectangle. Required bracing shall be determined by circumscribing a rectangle around the entire building on each floor as shown in Figure R602.12.1. The rectangle shall surround all enclosed offsets and projections such as sunrooms and attached garages. Open structures, such as carports and decks shall be permitted to be excluded. The rectangle shall have no side greater than 60 feet (18 288 mm), and the ratio between the long side and short side shall be a maximum of 3:1.

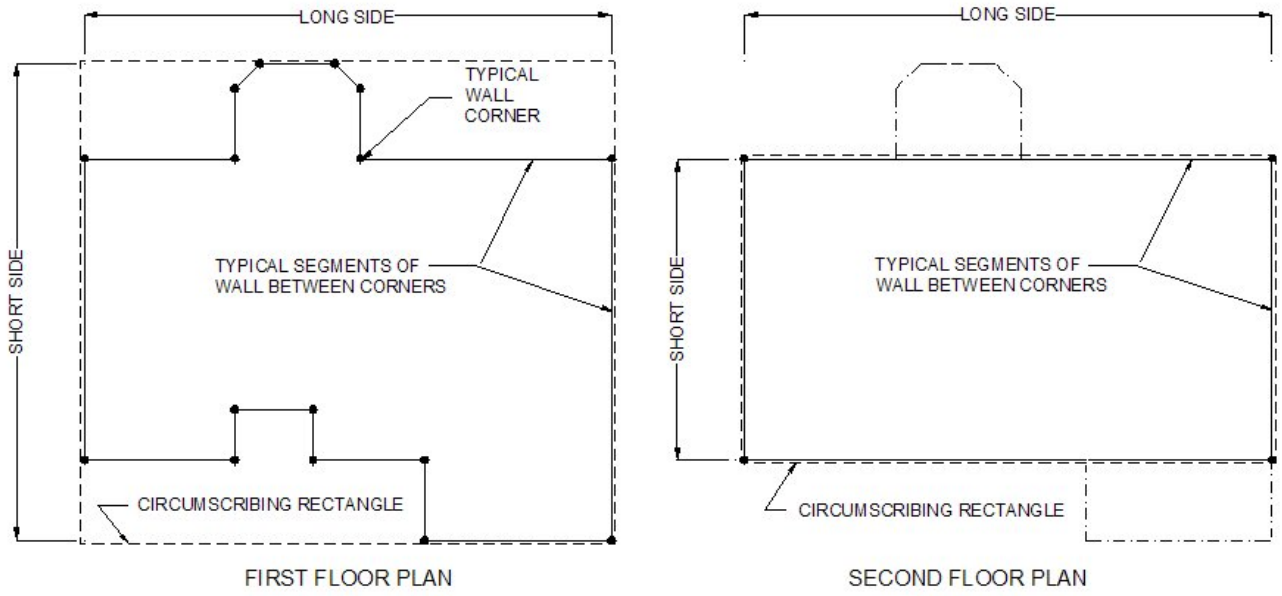


FIGURE R602.12.1
RECTANGLE CIRCUMSCRIBING AN ENCLOSED BUILDING

R602.12.2 Sheathing materials. The following sheathing materials installed on the exterior side of exterior walls shall be used to construct a bracing unit as defined in Section R602.12.3. Mixing materials is prohibited.

1. Wood structural panels with a minimum thickness of 3/8 inch (9.5 mm) fastened in accordance with Table R602.3(3).

2. Structural fiberboard sheathing with a minimum thickness of 1/2 inch (12.7 mm) fastened in accordance with Table R602.3(1).

R602.12.3 Bracing unit. A bracing unit shall be a full-height sheathed segment of the exterior wall with no openings or vertical or horizontal offsets and a minimum length as specified below. Interior walls shall not contribute toward the amount of required bracing. Mixing of Items 1 and 2 below is prohibited on the same story.

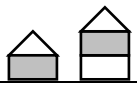
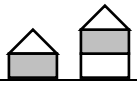
1. Where all framed portions of all exterior walls are sheathed in accordance with Section R602.12.2, including wall areas between bracing units, above and below openings and on gable end walls, the minimum length of a bracing unit shall be 3 feet (914 mm).

2. Where the exterior walls are braced with sheathing panels in accordance with Section R602.12.2 and areas between bracing units are covered with other materials, the minimum length of a bracing unit shall be 4 feet (1219 mm).

R602.12.3.1 Multiple bracing units. Segments of wall compliant with Section R602.12.3 and longer than the minimum bracing unit length shall be considered as multiple bracing units. The number of bracing units shall be determined by dividing the wall segment length by the minimum bracing unit length. Full-height sheathed segments of wall narrower than the minimum bracing unit length shall not contribute toward a bracing unit except as specified in Section R602.12.6.

R602.12.4 Number of bracing units. Each side of the circumscribed rectangle, as shown in Figure R602.12.1, shall have, at a minimum, the number of bracing units per Table R602.12.4 placed on the parallel exterior walls facing the side of the rectangle. Bracing units shall then be placed using the distribution requirements specified in Section R602.12.5.

TABLE R602.12.4
MINIMUM NUMBER OF BRACING UNITS ON EACH SIDE OF THE CIRCUMSCRIBED RECTANGLE

STORY LEVEL	EAVE-TO RIDGE HEIGHT (FEET)	MINIMUM NUMBER OF BRACING UNITS ON EACH LONG SIDE[a, b]						MINIMUM NUMBER OF BRACING UNITS ON EACH SHORT SIDE[a, b]					
		Length of short side (ft)[c]						Length of long side (ft)[c]					
		10	20	30	40	50	60	10	20	30	40	50	60
	10	1	2	2	2	3	3	1	2	2	2	3	3
		2	3	3	4	5	6	2	3	3	4	5	6
	15	1	2	3	3	4	4	1	2	3	3	4	4
		2	3	4	5	6	7	2	3	4	5	6	7

For SI: 1 ft = 304.8 mm

a. Interpolation shall not be permitted.

b. Cripple walls or wood-framed basement walls in a walk-out condition of a one-story structure shall be designed as the first floor of a two-story house.

c. Actual lengths of the sides of the circumscribed rectangle shall be rounded to the next highest unit of 10 when using this table.

R602.12.5 Distribution of bracing units. The placement of bracing units on exterior walls shall meet all of the following requirements as shown in Figure R602.12.5.

1. A bracing unit shall begin no more than 12 feet (3658 mm) from any wall corner.
2. The distance between adjacent edges of bracing units shall be no greater than 20 feet (6096 mm).
3. Segments of wall greater than 8 feet (2438 mm) in length shall have a minimum of one bracing unit.

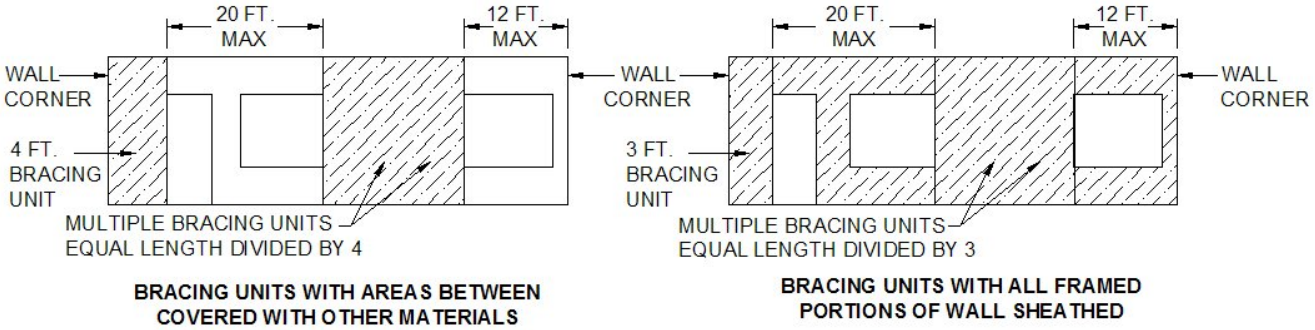


FIGURE R602.12.5
BRACING UNIT DISTRIBUTION

R602.12.6 Narrow panels. The bracing methods referenced in Section R602.10 and specified in Sections R602.12.6.1 through R602.12.6.3 shall be permitted when using simplified wall bracing.

R602.12.6.1 Method CS-G. Braced wall panels constructed as Method CS-G in accordance with Tables R602.10.4.1 and R602.10.5 shall be permitted for one-story garages when all framed portions of all exterior walls are sheathed with wood structural panels. Each CS-G panel shall be equivalent to 0.5 bracing units.

R602.12.6.2 Method CS-PF. Braced wall panels constructed as Method CS-PF in accordance with Section R602.10.6.4 shall be permitted when all framed portions of all exterior walls are sheathed with wood structural panels. Each CS-PF panel shall equal 0.5 bracing units. A maximum of four CS-PF panels shall be permitted on all the segments of walls parallel to each side of the circumscribed rectangle.

R602.12.6.3 Methods PFH and PFG. Braced wall panels constructed as Method PFH, in accordance with Section R602.10.6.2, and PFG, in accordance with Section R602.10.6.3, shall be permitted when bracing units are constructed using wood structural panels. Each PFH panel shall equal one bracing unit, and each PFG shall equal 0.75 bracing units.

R602.12.7 Lateral support. For bracing units located along the eaves, the vertical distance from the outside edge of the top wall plate to the roof sheathing above shall not exceed 9.25 inches (235 mm) at the location of a bracing unit unless lateral support is provided in accordance with Section R602.10.8.1.

R602.12.8 Stem walls. Masonry stem walls with a height and length of 48 inches (1219 mm) or less supporting a bracing unit or a Method CS-G, CS-PF or PFG braced wall panel shall be constructed in accordance with Figure R602.10.9. Concrete stem walls greater than 12 inches (305 mm) tall and less than 6 inches (152 mm) thick shall have reinforcement sized and located in accordance with Figure R602.10.9.

53. Change Section R612.2 to read:

R612.2 Window sills. In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the

window shall be a minimum of 18 inches (457 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4-inch-diameter (102 mm) sphere where such openings are located within 18 inches (457 mm) of the finished floor.

Exceptions:

1. Windows whose openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened position.

2. Openings that are provided with window fall prevention devices that comply with Section R612.3.

3. Openings that are provided with fall protection devices that comply with ASTM F 2090.

4. Windows that are provided with opening limiting devices that comply with Section R612.4.

54. Change Section R703.7 to read:

R703.7 Stone and masonry veneer, general. Stone and masonry veneer shall be installed in accordance with this chapter, Table R703.4 and Figure R703.7. These veneers installed over a backing of wood or cold-formed steel shall be limited to the first story above-grade and shall not exceed 5 inches (127 mm) in thickness. See Tables R602.10.3(3) and R602.10.3(4) for wall bracing requirements for masonry veneer for wood framed construction and Section R603.9.5 for wall bracing requirements for masonry veneer for cold-formed steel construction.

Exceptions:

1. For all buildings in Seismic Design Categories A, B and C, exterior stone or masonry veneer, as specified in Table R703.7(1), with a backing of wood or steel framing shall be permitted to the height specified in Table R703.7(1) above a noncombustible foundation.

2. For detached one- or two-family dwellings in Seismic Design Categories D_0, D_1 and D_2, exterior stone or masonry veneer, as specified in Table R703.7(2), with a backing of wood framing shall be permitted to the height specified in Table R703.7(2) above a noncombustible foundation.

55. Delete the reference to footnote "f" and the footnote itself in Figure R802.11.

56. Delete Section N1101.9.

57. Change Section N1103.2.2 to read:

N1103.2.2 Sealing. All ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed. Joints and seams shall comply with Section M1601.4.1 of the International Residential Code. Verification of compliance with this section shall be in accordance with either Section N1103.2.2.1 or Section N1103.2.2.2.

58. Add Section N1103.2.2.1 to read:

N1103.2.2.1 Testing option. Duct tightness shall be verified by either of the following:

1. Post-construction test: Leakage to outdoors shall be less than or equal to 8 cfm (3.78 L/s) per 100 ft^2 (9.29 m^2) of conditioned floor area or a total leakage less than or equal to 12 cfm (5.66 L/s) per 100 ft^2 (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler end closure. All register boots shall be taped or otherwise sealed during the test.

2. Rough-in test: Total leakage shall be less than or equal to 6 cfm (2.83 L/s) per 100 ft^2 (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inch w.g. (25 Pa) across the roughed in system, including the manufacturer's air handler enclosure. All register boots shall be

taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 4 cfm (1.89 L/s) per 100 ft^2 (9.29 m^2) of conditioned floor area.

Exception: Duct tightness test is not required if the air handler and all ducts are located within conditioned space.

When this option is chosen, testing shall be performed by approved qualified individuals, testing agencies or contractors. Testing and results shall be as prescribed in Section N1103.2.2 and approved recognized industry standards.

59. Add Section N1103.2.2.2 to read:

N1103.2.2.2 Visual inspection option. In addition to the inspection of ducts otherwise required by this code, when the air handler and all ducts are not within conditioned space and this option is chosen to verify duct tightness, duct tightness shall be considered acceptable when the requirements of Section N1103.2.2 are field verified.

60. Change Section M1502.4.4.1 to read:

M1502.4.4.1 Specified length. The maximum length of the exhaust duct shall be 35 feet (10 668 mm) from the connection to the transition duct from the dryer to the outlet terminal. Where fittings are used the maximum length of the exhaust duct shall be reduced in accordance with Table M1502.4.4.1.

61. Add Section M1801.1.1 to read:

M1801.1.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection or inspections shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with this code.

2. Vent or chimney systems are clean, free of any obstruction or blockages, defects or deterioration and are in operable condition.

Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

62. Add Section G2425.1.1 to read:

G2425.1.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection or inspections shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with this code.

2. Vent or chimney systems are clean, free of any obstruction or blockages, defects, or deterioration and are in operable condition.

Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

63. Change Section P2601.2 to read:

P2601.2 Connections. Plumbing fixtures, drains and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems.

Exception: Bathtubs, showers, lavatories, clothes washers and laundry trays are not required to discharge to the sanitary drainage system where those fixtures discharge to an approved gray water or rain water recycling system.

64. Change Section P2602.1 to read:

P2602.1 General. The water and drainage system of any building or premises where plumbing fixtures are installed shall be connected to a public or private water supply and a public or private sewer system. As provided for in Section 103.11 of Part I of the Virginia Uniform Statewide Building Code (13 VAC 5-63) for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality.

Note: See also the Memorandums of Agreement in the "Related Laws Package," which is available from the Virginia Department of Housing and Community Development.

65. Change Section P2903.5 to read:

P2903.5 Water hammer. The flow velocity of the water distribution system shall be controlled to reduce the possibility of water hammer. A water-hammer arrestor shall be installed where quick-closing valves are utilized, unless otherwise approved. Water hammer arrestors shall be installed in accordance with manufacturer's specifications. Water hammer arrestors shall conform to ASSE 1010.

66. Add Section P3002.2.1 to read:

P3002.2.1 Tracer wire. Nonmetallic sanitary sewer piping that discharges to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product, shall be utilized. The wire shall be installed in the same trench as the sewer within 12 inches (305 mm) of the pipe and shall be installed from within five feet of the building wall to the point where the building sewer intersects with the public system. At a minimum, one end of the wire shall terminate above grade in an accessible location that is resistant to physical damage, such as with a cleanout or at the building wall.

67. Add Section E3601.8 to read:

E3601.8 Energizing service equipment. The building official shall give permission to energize the electrical service equipment of a one- or two-family dwelling unit when all of the following requirements have been approved:

1. The service wiring and equipment, including the meter socket enclosure, shall be installed and the service wiring terminated.

2. The grounding electrode system shall be installed and terminated.

3. At least one receptacle outlet on a ground fault protected circuit shall be installed and the circuit wiring terminated.

4. Service equipment covers shall be installed.

5. The building roof covering shall be installed.

6. Temporary electrical service equipment shall be suitable for wet locations unless the interior is dry and protected from the weather.

68. Change Section E3802.4 to read:

E3802.4 In unfinished basements. Where type SE or NM cable is run at angles with joists in unfinished basements, cable assemblies containing two or more conductors of sizes 6 AWG and larger and assemblies containing three or more conductors of sizes 8 AWG and larger shall not require additional protection where

attached directly to the bottom of the joists. Smaller cables shall be run either through bored holes in joists or on running boards. NM cable installed on the wall of an unfinished basement shall be permitted to be installed in a listed conduit or tubing or shall be protected in accordance with Table E3802.1. Conduit or tubing shall be provided with a suitable insulating bushing or adapter at the point the where cable enters the raceway. The NM or SE cable sheath shall extend through the conduit or tubing and into the outlet or device box not less than 1/4 inch (6.4 mm). The cable shall be secured within 12 inches (305 mm) of the point where the cable enters the conduit or tubing. Metal conduit, tubing, and metal outlet boxes shall be connected to an equipment grounding conductor.

69. Change Section E3902.11 to read:

E3902.11 Arc-fault protection of bedroom outlets. All branch circuits that supply 120-volt, single phase, 15- and 20-ampere outlets installed in bedrooms shall be protected by a combination type arc-fault circuit interrupter installed to provide protection of the branch circuit.

Exceptions:

1. Where a combination AFCI is installed at the first outlet to provide protection for the remaining portion of the branch circuit, the portion of the branch circuit between the branch-circuit overcurrent device and such outlet shall be wired with metal outlet and junction boxes and RMC, IMC, EMT or steel armored cable, Type AC meeting the requirements of Section E3908.8.

2. AFCI protection is not required for a branch circuit supplying only a fire alarm system where the branch circuit is wired with metal outlet and junction boxes and RMC, IMC, EMT or steel armored cable Type AC meeting the requirements of Section E3908.8.

CHAPTER 4

SPECIAL DETAILED REQUIREMENTS BASED ON USE AND OCCUPANCY

Delete Section 403.4.4 of the IBC.

Add Section 407.10 to the IBC to read:

407.10 Special locking arrangement. Means of egress doors shall be permitted to contain locking devices restricting the means of egress in areas in which the clinical needs of the patients require restraint of movement, where all of the following conditions are met:

1. The locks release upon activation of the fire alarm system or the loss of power.

2. The building is equipped with an approved automatic sprinkler system in accordance with Section 903.3.1.1.

3. A manual release device is provided at a nursing station responsible for the area.

4. A key-operated switch or other manual device is provided adjacent to each door equipped with the locking device. Such switch or other device, when operated, shall result in direct interruption of power to the lock – independent of the control system electronics.

5. All staff shall have keys or other means to unlock the switch or other device or each door provided with the locking device.

Add Section 407.11 to the IBC to read:

407.11 Emergency power systems. Emergency power shall be provided for medical life support equipment, operating, recovery, intensive care, emergency rooms, fire detection and alarm systems in any Group I-2 occupancy licensed by the Virginia Department of Health as a hospital, nursing home or hospice facility.

Change the title of IBC Section 410 to read:

STAGES, PLATFORMS AND TECHNICAL PRODUCTION AREAS

Delete the following definitions in IBC Section 410.2:

FLY GALLERY.

GRIDIRON.

Add the following definition to IBC Section 410.2 to read:

TECHNICAL PRODUCTION AREA. Open elevated areas or spaces intended for entertainment technicians to walk on and occupy for servicing and operating entertainment technology systems and equipment. Galleries, including fly and lighting galleries, gridirons, catwalks and similar areas are designed for these purposes.

Delete Section 410.5.3 of the IBC, add new Section 410.6 to the IBC and renumber Sections 410.6 and 410.7 of the IBC to Sections 410.7 and 410.8 respectively.

410.6 Means of egress. Except as modified or as provided for in this section, the provisions of Chapter 10 shall apply.

410.6.1 Arrangement. Where two or more exits or exit access doorways are required per Section 1015.1 from the stage, at least one exit or exit access doorway shall be provided on each side of the stage.

410.6.2 Stairway and ramp enclosure. Stairways and ramps provided from stages, platforms and technical production areas are not required to be enclosed.

410.6.3 Technical production areas. Technical production areas shall be provided with means of egress and means or escape in accordance with Section 410.6.3.1 through 410.6.3.5.

410.6.3.1 Means of egress. At least one means of egress shall be provided from technical production areas.

410.6.3.2 Travel distance. The maximum length of exit access travel shall not exceed 300 feet (91 440 mm) for buildings without a sprinkler system and 400 feet (121 920 mm) for buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

410.6.3.3 Two means of egress. Where two means of egress are required, the common path of travel shall not exceed 100 feet (30 480 mm).

Exception: A means of egress to a roof in place of a second means of egress is permitted.

410.6.3.4 Path of egress travel. The following exit access components are permitted when serving technical production areas:

1. Stairways.
2. Ramps.
3. Spiral stairways.
4. Catwalks.
5. Alternating tread devices.
6. Permanent ladders.

410.6.3.5 Width. The path of egress travel within and from technical production areas shall be a minimum of 22 inches (559 mm).

Add Section 415.1.1 to the IBC to read:

415.1.1 Flammable and combustible liquids. Notwithstanding the provisions of this chapter, the storage, handling, processing, and transporting of flammable and combustible liquids shall be in accordance with the mechanical code and the fire code listed in Chapter 35 of this code. Regulations governing the installation, repair, upgrade, and closure of underground and aboveground storage tanks under the Virginia State Water Control Board regulations 9 VAC 25-91 and 9 VAC 25-580 are adopted and incorporated by reference to be an enforceable part of this code. Where differences occur between the provisions of this code and the incorporated provisions of the State Water Control Board regulations, the provisions of the State Water Control Board regulations shall apply.

Add IBC Section 424 Manufactured Homes and Industrialized Buildings.

Add Section 424.1 to the IBC to read:

424.1 General. The provisions of this section shall apply to the installation or erection of manufactured homes subject to the Virginia Manufactured Home Safety Regulations (13 VAC 5-95) and industrialized buildings subject to the Virginia Industrialized Building Safety Regulations (13 VAC 5-91).

Add Section 424.2 to the IBC to read:

424.2 Site work for manufactured homes. The aspects for the installation and set up of a new manufactured home covered by this code rather than the Virginia Manufactured Home Safety Regulations (13 VAC 5-95) include, but are not limited to, footings, foundations systems, anchoring of the home, exterior, interior close-up, and additions and alterations done during initial installation. Such aspects shall be subject to and shall comply with the manufacturer's installation instructions provided by the manufacturer of the home. To the extent that the manufacturer's installation instructions do not address any aspect enumerated above or when the manufacturer's installation instructions are not available, such aspects shall be subject to and comply with 24 CFR Part 3285 – Model Manufactured Home Installation Standards. To the extent that the manufacturer's installation instructions and 24 CFR Part 3285 do not address any aspect enumerated above, the installer must first attempt to obtain Design Approval Primary Inspection Agency (DAPIA) as defined in 24 CFR Part 3285.5, approved designs and instructions prepared by the manufacturer; or if designs and instructions are not available from the manufacturer, obtain an alternate design prepared and certified by an RDP that is consistent with the manufactured home design, conforms to the requirements of the Manufactured Housing Consensus Committee (MHCSS) as defined in 24 CFR Part 3285.5, and has been approved by the manufacturer and the DAPIA. Stoops, decks, porches and used manufactured homes shall comply with the provisions of this code, which shall include the option of using the IRC for the technical requirements for the installation and set up of the home and the use of Appendix E of the IRC for additions, alterations and repairs to the home. Additionally, all applicable provisions of Chapter 1 of this code, including but not limited to requirements for permits, inspections, certificates of occupancy and requiring compliance, are applicable to the installation and set up of a manufactured home. Where the installation or erection of a manufactured home utilizes components that are to be concealed, the installer shall notify the building official that an inspection is necessary and assure that an inspection is performed and approved prior to concealment of such components, unless the building official has agreed to an alternative method of verification.

Add Section 424.3 to the IBC to read:

424.3 Wind load requirements for manufactured homes. Manufactured homes shall be anchored to withstand the wind loads established by the federal regulation for the area in which the manufactured home is installed. For the purpose of this code, Wind Zone II of the federal regulation shall include the cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach.

Add Section 424.4 to the IBC to read:

424.4 Skirting requirements for manufactured homes. As used in this section, "skirting" means a weather-resistant material used to enclose the space from the bottom of the manufactured home to grade. In accordance with Section 36-99.8 of the Code of Virginia, manufactured homes installed or relocated shall have skirting installed within 60 days of occupancy of the home. Skirting materials shall be durable, suitable for exterior exposures and installed in accordance with the manufacturer's installation instructions. Skirting shall be secured as necessary to ensure stability, to minimize vibrations, to minimize susceptibility to wind damage and to compensate for possible frost heave. Each manufactured

home shall have a minimum of one opening in the skirting providing access to any water supply or sewer drain connections under the home. Such openings shall be a minimum of 18 inches (457 mm) in any dimension and not less than three square feet (.28 m^2) in area. The access panel or door shall not be fastened in a manner requiring the use of a special tool to open or remove the panel or door. On-site fabrication of the skirting by the owner or installer of the home shall be acceptable, provided that the material meets the requirements of this code. In addition, as a requirement of this code, skirting for the installation and set-up of a new manufactured home shall also comply with the requirements of 24 CFR Part 3285 – Model Manufactured Home Installation Standards.

Add Section 424.5 to the IBC to read:

424.5 Site work for industrialized buildings. Site work for the erection and installation of an industrialized building shall comply with the manufacturer's installation instructions. To the extent that any aspect of the erection or installation of an industrialized building is not covered by the manufacturer's installation instructions, this code shall be applicable, including the use of the IRC for any construction work where the industrialized building would be classified as a Group R-5 building. In addition, all administrative requirements of this code for permits, inspections, and certificates of occupancy are also applicable. Further, the building official may require the submission of plans and specifications for details of items needed to comprise the finished building that are not included or specified in the manufacturer's instructions, including, but not limited to, footings, foundations, supporting structures, proper anchorage, and the completion of the plumbing, mechanical, and electrical systems. Where the installation or erection of an industrialized building utilizes components that are to be concealed, the installer shall notify the building official that an inspection is necessary and assure that an inspection is performed and approved prior to concealment of such components, unless the building official has agreed to an alternative method of verification.

Exception: Temporary family health care structures installed pursuant to Section 15.2-2292.1 of the Code of Virginia shall not be required or permitted to be placed on a permanent foundation, but shall otherwise remain subject to all pertinent provisions of this section.

Add Section 424.6 to the IBC to read:

424.6 Relocated industrialized buildings; alterations and additions. Industrialized buildings constructed prior to January 1, 1972, shall be subject to Section 117 when relocated. Alterations and additions to any existing industrialized buildings shall be subject to pertinent provisions of this code. Building officials shall be permitted to require the submission of plans and specifications for the model to aid in the evaluation of the proposed alteration or addition. Such plans and specifications shall be permitted to be submitted in electronic or other available format acceptable to the building official.

Add IBC Section 425 Aboveground Liquid Fertilizer Tanks.

Add Sections 425.1 through 425.6 to the IBC to read:

425.1 General. This section shall apply to the construction of ALFSTs and shall supersede any conflicting requirements in other provisions of this code. ALFSTs shall also comply with any applicable non-conflicting requirements of this code.

425.1.1 When change of occupancy rules apply. A change of occupancy to use a tank as an ALFST occurs when there is a change in the use of a tank from storing liquids other than liquid fertilizers to use storing liquid fertilizer and when the type of liquid fertilizer being stored has a difference of at least 20 percent of the specific gravity or operating temperature, or both, or a significant change in the material's compatibility.

425.2 Standards. Newly constructed welded steel ALFSTs shall comply with API 650 and TFI RMIP, as applicable. Newly constructed ALFSTs constructed of materials other than welded steel shall be constructed in accordance with accepted engineering practice to prevent the discharge of liquid fertilizer and shall be constructed of materials that are resistant to corrosion, puncture or cracking. In addition, newly constructed ALFSTs constructed of materials other than welded steel shall comply with TFI RMIP, as applicable. For the purposes of this code, the use of TFI RMIP shall be construed as mandatory and any language in TFI RMIP, such as, but not limited to, the terms "should" or "may" which indicate that a provision is only a recommendation or a guideline shall be taken as a requirement. ALFSTs shall be placarded in accordance with NFPA 704.

Exception: Sections 4.1.4, 4.2.5, 5.1.2, 5.2.8, 5.3 and 8.1(d)(i) of TFI RMIP shall not be construed as mandatory.

425.3 Secondary containment. When ALFSTs are newly constructed and when there is a change of occupancy to use a tank as an ALFST, a secondary containment system designed and constructed to prevent any liquid fertilizer from reaching the surface water, groundwater or adjacent land before cleanup occurs shall be provided. The secondary containment system may include dikes, berms or retaining walls, curbing, diversion ponds, holding tanks, sumps, vaults, double-walled tanks, liners external to the tank, or other approved means and shall be capable of holding up to 110 percent of the capacity of the ALFST as certified by an RDP.

425.4 Repair, alteration and reconstruction of ALFSTs. Repair, alteration and reconstruction of ALFSTs shall comply with applicable provisions of API 653 and TFI RMIP.

425.5 Inspection. Applicable inspections as required by and in accordance with API 653 and TFI RMIP shall be performed for repairs and alterations to ALFSTS, the reconstruction of ALFSTs and when there is a change of occupancy to use a tank as an ALFST. When required by API 653 or TFI RMIP, such inspections shall occur prior to the use of the ALFST.

425.6 Abandoned ALFSTs. Abandoned ALFSTs shall comply with applicable provisions of Section 3404.2.13.2 of the IFC.

CHAPTER 7

FIRE AND SMOKE PROTECTION FEATURES

Change Section 703.6 of the IBC to read:

703.6 Fire-resistance assembly marking. Concealed fire walls, vertical fire separation assemblies, fire barriers, fire partitions and smoke barriers shall be designated above ceilings and on the inside of all ceiling access doors which provide access to such fire rated assemblies by signage having letters no smaller than one inch (25.4 mm) in height. Such signage shall indicate the fire-resistance rating of the assembly and the type of assembly and be provided at horizontal intervals of no more than eight feet (2438 mm).

Note: An example of suggested formatting for the signage would be "ONE HOUR FIRE PARTITION."

Change Section 705.2 of the IBC to read:

705.2 Projections. Except for decks and open porches of buildings in Groups R-3 and R-4, cornices, eave overhangs, exterior balconies and similar projections extending beyond the exterior wall shall conform to the requirements of this section and Section 1406. Exterior egress balconies and exterior exit stairways shall also comply with Sections 1019 and 1026, respectively. Projections shall not extend beyond the distance determined by the following three methods, whichever results in the lesser projection:

1. A point one-third the distance from the exterior face of the wall to the lot line where protected openings or a combination of protected and unprotected openings are required in the exterior wall.

2. A point one-half the distance from the exterior face of the wall to the lot line where all openings in the exterior wall are permitted to be unprotected or the building is equipped throughout with an automatic sprinkler system installed under the provisions of Section 705.8.2.

3. More than 12 inches (305 mm) into areas where openings are prohibited.

Buildings on the same lot and considered as portions of one building in accordance with Section 705.3 are not required to comply with this section.

Add Exception 4 to Section 706.5.2 of the IBC to read:

4. Decks and open porches of buildings in Groups R-3 and R-4.

Delete Sections 708.14.1 through 708.14.2.11.

Change Section 716.5.3 of the IBC to read:

716.5.3 Penetrations of shaft enclosures. Shaft enclosures that are permitted to be penetrated by ducts and air transfer openings shall be protected with approved fire and smoke dampers installed in accordance with their listing.

Exceptions:

1. Fire and smoke dampers are not required where steel exhaust subducts extend at least 22 inches (559 mm) vertically in exhaust shafts provided there is a continuous airflow upward to the outside.

2. Fire dampers are not required where penetrations are tested in accordance with ASTM E 119 as part of the fire-resistance rated assembly.

3. Fire and smoke dampers are not required where ducts are used as part of an approved smoke-control system in accordance with Section 909.

4. Fire and smoke dampers are not required where the penetrations are in parking garage exhaust or supply shafts that are separated from other building shafts by not less than two-hour fire-resistance-rated construction.

5. Smoke dampers are not required where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

CHAPTER 9

FIRE PROTECTION SYSTEMS

Add the following definitions to Section 902 of the IBC to read:

EMERGENCY COMMUNICATION EQUIPMENT. Emergency communication equipment, includes but is not limited to, two-way radio communications, signal booster, bi-directional amplifiers, radiating cable systems or internal multiple antenna, or a combination of the foregoing.

EMERGENCY PUBLIC SAFETY PERSONNEL. Emergency public safety personnel includes firefighters, emergency medical personnel, law-enforcement officers and other emergency public safety personnel routinely called upon to provide emergency assistance to members of the public in a wide variety of emergency situations, including, but not limited to, fires, medical emergencies, violent crimes and terrorist attacks.

Change the following definition in Section 902 of the IBC to read:

AUTOMATIC FIRE-EXTINGUISHING SYSTEM. An approved system of devices and equipment which automatically detects a fire and discharges an approved fire-extinguishing agent onto or in the area of a fire and shall include among other systems an automatic sprinkler system, unless otherwise expressly stated.

Change Section 903.2.1.2 of the IBC to read:

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided for Group A-2 occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (464.5 m^2);

2. The fire area has an occupant load of 100 or more in night clubs or 300 or more in other Group A-2 occupancies; or

3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

Change Item 2 of Section 903.2.1.3 of the IBC to read:

2. In Group A-3 occupancies other than churches, the fire area has an occupant load of 300 or more; or

Change Section 903.2.3 of the IBC to read:

903.2.3 Group E. An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than 20,000 square feet (1858 m^2) in area.

2. Throughout every portion of educational buildings below the lowest level of exit discharge serving that portion of the building.

   Exception: An automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area where every classroom throughout the building has at least one exterior exit door at ground level.

Change Section 903.2.7 of the IBC to read:

903.2.7 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds 12,000 square feet (1115 m^2).

2. A Group M fire area is located more than three stories above grade plane.

3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m^2).

Change Section 903.2.8 of the IBC to read:

903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area, except in the following Group R-2 occupancies when the necessary water pressure or volume, or both, for the system is not available:

Exceptions:

1. Buildings which do not exceed two stories, including basements which are not considered as a story above grade, and with a maximum of 16 dwelling units per fire area. Each dwelling unit shall have at least one door opening to an exterior exit access that leads directly to the exits required to serve that dwelling unit.

2. Buildings where all dwelling units are not more than two stories above the lowest level of exit discharge and not more than one story below the highest level of exit discharge of exits serving the dwelling unit and a two-hour fire barrier is provided between each pair of dwelling units. Each bedroom of a dormitory or boarding house shall be considered a dwelling unit under this exception.

Add Item 6 to Section 903.3.1.1.1 of the IBC to read:

6. Elevator machine rooms and elevator machine spaces for occupant evacuation elevators.

Add Section 903.3.1.2.2 to the IBC to read:

903.3.1.2.2 Attics. Sprinkler protection shall be provided for attics in buildings of Type III, IV or V construction in Group R-2 occupancies that are designed or developed and marketed to senior citizens 55 years of age or older and in Group I-1 occupancies in accordance with Section 6.7.2 of NFPA 13R.

Change Section 903.4.2 of the IBC to read:

903.4.2 Alarms. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system. Group R-2 occupancies that contain 16 or more dwelling units or sleeping units, any dwelling unit or sleeping unit two or more stories above the lowest level of exit discharge, or any dwelling unit or sleeping unit more than one story below the highest level of exit discharge of exits serving the dwelling unit or sleeping unit shall provide a manual fire alarm box at an approved location to activate the suppression system alarm.

Add an exception to Section 905.2 of the IBC to read:

Exception: The residual pressure of 100 psi for 2-1/2 inch hose connection and 65 psi for 1-1/2 inch hose connection is not required in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and where the highest floor level is not more than 150 feet above the lowest level of fire department vehicle access.

Change Item 1 of Section 906.1 of the IBC to read:

1. In Group A, B, E, F, H, I, M, R-1, R-4, and S occupancies.

   Exceptions:

   1. In Group A, B and E occupancies equipped throughout with quick response sprinklers, portable fire extinguishers shall be required only in locations specified in Items 2 through 6.

   2. In Group I-3 occupancies, portable fire extinguishers shall be permitted to be located at staff locations and the access to such extinguishers shall be permitted to be locked.

Change Section 907.2.1.1 of the IBC to read:

907.2.1.1 System initiation in Group A occupancies with a occupant load of 1,000 or more and in certain night clubs. Activation of the fire alarm in Group A occupancies with an occupant load of 1,000 or more and in night clubs with an occupant load of 300 or more shall initiate a signal using an emergency voice and alarm communications system in accordance with Section 907.5.2.2.

Exception: Where approved, the prerecorded announcement is allowed to be manually deactivated for a period of time, not to exceed three minutes, for the sole purpose of allowing a live voice announcement from an approved, constantly attended location.

Add an exception to Section 907.5.2.1.1 of the IBC to read:

Exception: Sound pressure levels in Group I-3 occupancies shall be permitted to be limited to only the notification of occupants in the affected smoke compartment.

Add Sections 908.7, 908.7.1 and 908.7.2 to the IBC to read:

908.7 Carbon monoxide alarms. Carbon monoxide alarms shall be provided in new buildings and structures in accordance with this section.

908.7.1 Alarm requirements. Carbon monoxide alarms shall be single station, hard wired, plug-in or battery type, listed as complying with UL 2034, and shall be installed in accordance with this code and the manufacturer's installation instructions.

908.7.2 Where required. Carbon monoxide alarms shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms in dwelling units and outside of, but in the immediate vicinity of, each sleeping unit in all Group R occupancies located within buildings containing fuel-fired appliances or where a dwelling unit or sleeping unit in a Group R occupancy is attached to a Group U private garage.

Change Section 909.6 of the IBC to read:

909.6 Pressurization method. When approved by the building official, the means of controlling smoke shall be permitted by pressure differences across smoke barriers. Maintenance of a tenable environment is not required in the smoke-control zone of fire origin.

Change Section 911.1.3 of the IBC to read:

911.1.3 Size. The fire command center shall be a minimum of 96 square feet (9 m^2) in area with a minimum dimension of 8 feet (2438 mm).

Exception: Where it is determined by the building official, after consultation with the fire chief, that specific building characteristics require a larger fire command center, the building official may increase the minimum required size of the fire command center up to 200 square feet (19 m^2) in area with a minimum dimension of up to 10 feet (3048 mm).

Change the title of IBC Section 915 to read:

IN-BUILDING EMERGENCY COMMUNICATIONS COVERAGE

Change Section 915.1 of the IBC to read:

915.1 General. For localities utilizing public safety wireless communications, dedicated infrastructure to accommodate and perpetuate continuous in-building emergency communication equipment to allow emergency public safety personnel to send and receive emergency communications shall be provided in new buildings and structures in accordance with this section.

Exceptions:

1. Buildings of Use Groups A-5, I-4, within dwelling units of R-2, R-3, R-4, R-5, and U.
2. Buildings of Type IV and V construction without basements, that are not considered unlimited area buildings in accordance with Section 507.
3. Above grade single story buildings of less than 20,000 square feet.
4. Buildings or leased spaces occupied by federal, state, or local governments, or the contractors thereof, with security requirements where the building official has approved an alternative method to provide emergency communication equipment for emergency public safety personnel.
5. Where the owner provides technological documentation from a qualified individual that the structure or portion thereof does not impede emergency communication signals.

Add Sections 915.1.1, 915.1.2 and 915.1.3 to the IBC to read:

915.1.1 Installation. The building owner shall install radiating cable, such as coaxial cable or equivalent. The radiating cable shall be installed in dedicated conduits, raceways, plenums, attics, or roofs, compatible for these specific installations as well as other applicable provisions of this code. The locality shall be responsible for the installation of any additional communication equipment required for the operation of the system.

915.1.2 Operations. The locality will assume all responsibilities for the operation and maintenance of the emergency communication equipment. The building owner shall provide sufficient operational space within the building to allow the locality access to and the ability to operate in-building emergency communication equipment.

915.1.3 Inspection. In accordance with Section 113.3, all installations shall be inspected prior to concealment.

Add Section 915.2 to the IBC to read:

915.2 Acceptance test. Upon completion of installation, after providing reasonable notice to the owner or their representative, emergency public safety personnel shall have the right during normal business hours, or other mutually agreed upon time, to enter onto the property to conduct field tests to verify that the required level of radio coverage is present at no cost to the owner. Any noted deficiencies in the installation of the radiating cable or operational space shall be provided in an inspection report to the owner or the owner's representative.

CHAPTER 10

MEANS OF EGRESS

Change Section 1004.3 of the IBC to read:

1004.3 Posting of occupant load. Every room or space that is an assembly occupancy and where the occupant load of that room or space is 50 or more shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

Change Section 1005.1 of the IBC to read:

1005.1 Minimum required egress width. The means of egress width shall not be less than required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.3 inches (7.62 mm) per occupant for stairways and by 0.2 inches (5.08 mm) per occupant for other egress components. The width shall not be less than specified elsewhere in this code. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.

Exceptions:

1. Means of egress complying with Section 1028.

2. For occupancies other than Groups H-1, H-2, H-3, H-4 and I-2, in buildings equipped with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.2 inches (5.08 mm) per occupant for stairways and by 0.15 inches (3.81 mm) per occupant for other egress components.

Change Section 1007.2 of the IBC to read:

1007.2 Continuity and components. Each required accessible means of egress shall be continuous to a public way and shall consist of one or more of the following components:

1. Accessible routes complying with Section 1104.

2. Interior exit stairways complying with Sections 1007.3 and 1022.

3. Exterior exit stairways complying with Sections 1007.3 and 1026 and serving levels other than the level of exit discharge.

4. Elevators complying with Section 1007.4.

5. Platform lifts complying with Section 1007.5.

6. Horizontal exits complying with Section 1025.

7. Ramps complying with Section 1010.

8. Areas of refuge complying with Section 1007.6.

9. Exterior area for assisted rescue complying with Section 1007.7 serving exits at the level of exit discharge.

Change Section 1007.6.2 of the IBC to read:

1007.6.2 Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with Section 709 or a horizontal exit complying with Section 1025. Each area of refuge shall be designed to minimize the intrusion of smoke.

Exceptions:

1. Areas of refuge located within an exit enclosure.

2. Areas of refuge where the area of refuge and areas served by the area of refuge are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

Change Section 1007.7, including subsections, of the IBC to read:

1007.7 Exterior area for assisted rescue. The exterior area for assisted rescue shall be an area provided on the exterior landing serving an exit door on an accessible route. The exterior area of assisted rescue shall meet the size and access requirements of Section 1007.6.1.

1007.7.1 Separation. Exterior walls separating the exterior area of assisted rescue from the interior of the building shall have a minimum fire resistance rating of 1 hour, rated for exposure to fire from the inside. The fire resistance rated exterior wall construction shall extend horizontally 10 feet (3048 mm) beyond the landing on either side of the landing or equivalent fire resistance rated construction is permitted to extend out perpendicular to the exterior wall 4 feet (1220 mm) minimum on the side of the landing. The fire resistance rated construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower. Openings within such fire resistance rated exterior walls shall be protected in accordance with Section 715.

1007.7.2 Openness. The exterior area for assisted rescue shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.

1007.7.3 Exterior stairway. Exterior stairways that are part of the means of egress for the exterior area for assisted rescue shall provide a clear width of 48 inches (1219 mm) between handrails.

Change Item 2 of Section 1008.1.9.3 of the IBC to read:

2. In buildings in occupancy Groups B, F, M and S, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:

   2.1. The locking device is readily distinguishable as locked.

   2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters one inch (25 mm) high on a contrasting background.

   2.3. The use of the key-operated locking device is revokable by the building official for due cause.

Delete Section 1008.1.9.6 of the IBC.

Change Section 1008.1.9.7 of the IBC to read:

1008.1.9.7 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy including Group A-3, airport facilities, except Group A, E and H occupancies in buildings which are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an

approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through 6 below. A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.

2. The doors unlock upon loss of power controlling the lock or lock mechanism.

3. The door locks shall have the capability of being unlocked by a signal from the fire command center.

4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (67 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only.

   Exception: Where approved, a delay of not more than 30 seconds is permitted.

5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS.

   Exception: Where approved, such sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 30 SECONDS.

6. Emergency lighting shall be provided at the door.

Delete the exception in Section 1008.1.10 of the IBC.

Add Section 1008.1.11 to the IBC to read:

1008.1.11 Locking certain residential sliding doors. In dwelling units of Group R-2 buildings, exterior sliding doors which are one story or less above grade, or shared by two dwelling units, or are otherwise accessible from the outside, shall be equipped with locks. The mounting screws for the lock case shall be inaccessible from the outside. The lock bolt shall engage the strike in a manner that will prevent it from being disengaged by movement of the door.

Exception: Exterior sliding doors which are equipped with removable metal pins or charlie bars.

Add Section 1008.1.12 to the IBC to read:

1008.1.12 Door viewers in certain residential buildings. Entrance doors to dwelling units of Group R-2 buildings shall be equipped with door viewers with a field of vision of not less than 180 degrees.

Exception: Entrance doors having a vision panel or side vision panels.

Change Exception 5 of Section 1009.4.2 of the IBC to read:

5. In Group R-3 occupancies; within dwelling units in Group R-2 occupancies; and in Group U occupancies that are accessory to a Group R-3 occupancy or accessory to individual dwelling units in Group R-2 occupancies; the maximum riser height shall be 8.25 inches (210 mm); the minimum tread depth shall be 9 inches (229 mm); the minimum winder tread depth at the walk line shall be 10 inches (254 mm); and the minimum winder tread depth shall be 6 inches (152 mm). A nosing not less than 0.75 inch (19.1 mm) but not more than 1.25 inches (32 mm) shall be provided on stairways with solid risers where the tread depth is less than 11 inches (279 mm).

Add Exception 3 to Section 1009.7 of the IBC to read:

3. Spiral stairways used as a means of egress from technical production areas.

Add Exception 3 to Item 4 of Section 1014.2 of the IBC to read:

3. A maximum of one exit access is permitted to pass through kitchens, store rooms, closets or spaces used for similar purposes provided such a space is not the only means of exit access.

Change Table 1015.1 of the IBC to read:

TABLE 1015.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD
A, B, E[a], F, M, U	50
H-1, H-2, H-3	3
H-4, H-5, I-1, I-3, I-4, R	10
S	29

a. Day care maximum occupant load is 10.

Change Exception 2 of Section 1015.2.1 of the IBC to read:

2. Where a building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, the separation distance of the exit doors or exit access doorways shall not be less than one-fourth of the length of the maximum overall diagonal dimension of the area served.

Delete Sections 1015.6 and 1015.6.1 of the IBC.

Change Table 1018.1 of the IBC to read:

TABLE 1018.1
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANTY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[b]
H-1, H-2, H-3	All	Not Permitted	1
H-4, H-5	Greater than 30	Not Permitted	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	1	0.5
I-2[a], I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	0

a. For requirements for occupancies in Group I-2, see Sections 407.2 and 407.3.
b. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

Add Exception 7 to Section 1018.2 of the IBC to read:

7. Forty-four inches (1118 mm) – In corridors of Group I-2 assisted living facilities serving areas with wheelchair, walker and gurney traffic where residents are capable of self-preservation or where resident rooms have a means of egress door leading directly to the outside.

Change Table 1021.2 to read:

TABLE 1021.2
STORIES WITH ONE EXIT

STORY	OCCUPANCY	MAXIMUM OCCUPANTS (OR DWELLING UNITS) PER FLOOR AND TRAVEL DISTANCE
First story or basement	A, B[d], E[e], F[d], M, U, S[d]	50 occupants and 75 feet travel distance
	H-2, H-3	3 occupants and 25 feet travel distance
	H-4, H-5, I, R	10 occupants and 75 feet travel distance
	S[a]	29 occupants and 100 feet travel distance
Second story	B[b], F, M, S[a]	29 occupants and 75 feet travel distance
	R-2	4 dwelling units and 50 feet travel distance
Third story	R-2[c]	4 dwelling units and 50 feet travel distance

For SI: 1 foot = 304.8 mm.

a. For the required number of exits for parking structures, see Section 1021.1.2.
b. For the required number of exits for air traffic control towers, see Section 412.3.
c. Buildings classified as Group R-2 equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and provided with emergency escape and rescue openings in accordance with Section 1029.
d. Group B, F and S occupancies in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 shall have a maximum travel distance of 100 feet.
e. Day care occupancies shall have a maximum occupant load of 10.

Change Exception 6 of Section 1022.1 of the IBC to read:

6. Means of egress stairways as provided for in Section 410.6.2 are not required to be enclosed.

Change Section 1022.8 of the IBC to read:

1022.8 Floor identification signs. A sign shall be provided at each floor landing in exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom of the exit enclosure and the identification of the stair or ramp by designation with a letter of the alphabet. The signage shall also state the story of, and the direction to, the exit discharge and the availability of roof access from the enclosure for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. Floor level identification signs in tactile characters complying with ICC A117.1 shall be located at each floor level landing adjacent to the door leading from the enclosure into the corridor to identify the floor level.

Change Section 1024.1 of the IBC to read:

1024.1 General. Approved luminous egress path markings delineating the exit path shall be provided in buildings of Groups A, B, E, I, M and R-1 having occupied floors located more than 420 feet (128 016 mm) above the lowest level of fire department vehicle access in accordance with Sections 1024.1 through 1024.5.

Exceptions:

1. Luminous egress path markings shall not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1027.1, Exception 1.

2. Luminous egress path markings shall not be required in areas of open parking garages that serve as part of the exit path in accordance with Section 1027.1, Exception 3.

CHAPTER 11

ACCESSIBILITY

Add an exception to Section 1101.2 of the IBC to read:

Exception: Wall-mounted visible alarm notification appliances in Group I-3 occupancies shall be permitted to be a maximum of 120 inches (3048 mm) above the floor or ground, measured to the bottom of the appliance. Such appliances shall otherwise comply with all applicable requirements.

Add Section 1103.2.16 to the IBC to read:

1103.2.16 Raised and lowered areas in places of religious worship. Raised or lowered areas in places of religious worship are not required to be accessible or to be served by an accessible route provided such areas are used exclusively for the performance of religious ceremonies and are located within an accessible story or mezzanine.

Add Section 1106.8 to the IBC to read:

1106.8 Identification of accessible parking spaces. In addition to complying with applicable provisions of this chapter, all accessible parking spaces shall be identified by above grade signs. A sign or symbol painted or otherwise displayed on the pavement of a parking space shall not constitute an above grade sign. All above grade parking space signs shall have the bottom edge of the sign no lower than four feet (1219 mm) nor higher than seven feet (2133 mm) above the parking surface. All disabled parking signs shall include the following language: PENALTY, $100-500 Fine, TOW-AWAY ZONE. Such language may be placed on a separate sign and attached below existing above grade disabled parking signs, provided that the bottom edge of the attached sign is no lower than four feet above the parking surface.

Change Item 1 of Section 1110.1 of the IBC to read:

1. Accessible parking spaces required by Section 1106.1.

CHAPTER 12

INTERIOR ENVIRONMENT

Add the following definitions to Section 1202.1 of the IBC:

DAY-NIGHT AVERAGE SOUND LEVEL (LDN). A 24-hour energy average sound level expressed in dBA, with a 10 decibel penalty applied to noise occurring between 10 p.m. and 7 a.m.

SOUND TRANSMISSION CLASS (STC) RATING. A single number characterizing the sound reduction performance of a material tested in accordance with ASTM E90-90, "Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions."

Add Section 1203.4.4 to the IBC to read:

1203.4.4 Insect screens in occupancies other than Group R. Every door, window and other outside opening for natural ventilation serving structures classified as other than a residential group containing habitable rooms, food preparation areas, food service areas, or any areas where products to be included or utilized in food for human consumption are processed, manufactured, packaged, or stored, shall be supplied with approved tightly fitting screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

Exception: Screen doors shall not be required for out swinging doors or other types of openings which make screening impractical, provided other approved means, such as air curtains or insect repellent fans are provided.

Add Section 1203.4.5 to the IBC to read:

1203.4.5 Insect screens in Group R occupancies. Every door, window and other outside opening required for natural ventilation purposes which serves a structure classified as a residential group shall be supplied with approved tightly fitted screens of not less than 16 mesh per inch (16 mesh per 25 mm) and every screen door used for insect control shall have a self-closing device.

Change Section 1207.1 of the IBC to read:

1207.1 Scope. Sections 1207.2 and 1207.3 shall apply to common interior walls, partitions and floor/ceiling assemblies between adjacent dwelling units or between dwelling units and adjacent public areas such as halls, corridors, stairs or service areas. Section 1207.4 applies to the construction of the exterior envelope of Group R occupancies within airport noise zones and to the exterior envelope of Group A, B, E, I and M occupancies in any locality in whose jurisdiction a

United States Master Jet Base is located or any adjacent locality when such requirements are enforced by a locality pursuant to Section 15.2-2295 of the Code of Virginia.

Add Section 1207.4 to the IBC to read:

1207.4 Airport noise attenuation standards. Where the Ldn is determined to be 65 dBA or greater, the minimum STC rating of structure components shall be provided in compliance with Table 1207.4. As an alternative to compliance with Table 1207.4, structures shall be permitted to be designed and constructed so as to limit the interior noise level to no greater than 45 Ldn. Exterior structures, terrain and permanent plantings shall be permitted to be included as part of the alternative design. The alternative design shall be certified by an RDP.

Add Table 1207.4 to the IBC to read:

TABLE 1207.4
AIRPORT NOISE ATTENUATION STANDARDS

LDN	STC OF EXTERIOR WALLS AND ROOF/CEILING ASSEMBLIES	STC OF DOORS AND WINDOWS
65-69	39	25
70-74	44	33
75 or greater	49	38

CHAPTER 13

ENERGY EFFICIENCY

Add Section 1301.1.1.1 to the IBC to read:

1301.1.1.1 Changes to the International Energy Conservation Code (IECC). The following change shall be made to the IECC:

1. Delete Section 401.3.

2. Change Section 403.2.2 to read:

   403.2.2 Sealing (Mandatory). All ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed. Joints and seams shall comply with Section M1601.4.1 of the International Residential Code. Verification of compliance with this section shall be in accordance with either Section 403.2.2.1 or Section 403.2.2.2.

3. Add Section 403.2.2.1 to read:

   403.2.2.1 Testing option. Duct tightness shall be verified by either of the following:

   1. Post-construction test: Leakage to outdoors shall be less than or equal to 8 cfm (3.78 L/s) per 100 ft^2 (9.29 m^2) of conditioned floor area or a total leakage less than or equal to 12 cfm (5.66 L/s) per 100 ft^2 (9.29m^2) of conditioned floor area when tested at a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler end closure. All register boots shall be taped or otherwise sealed during the test.

   2. Rough-in test: Total leakage shall be less than or equal to 6 cfm (2.83 L/s) per 100 ft^2 (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inch w.g. (25 Pa) across the roughed in system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 4 cfm (1.89 L/s) per 100 ft^2 (9.29 m^2) of conditioned floor area.

   Exception: Duct tightness test is not required if the air handler and all ducts are located within conditioned space.

When this option is chosen, testing shall be performed by approved qualified individuals, testing agencies or contractors. Testing and results shall be as prescribed in Section 403.2.2 and approved recognized industry standards.

4. Add Section 403.2.2.2 to read:

403.2.2.2 Visual inspection option. In addition to the inspection of ducts otherwise required by this code, when the air handler and all ducts are not within conditioned space and this option is chosen to verify duct tightness, duct tightness shall be considered acceptable when the requirements of Section 403.2.2 are field verified.

CHAPTER 14

EXTERIOR WALLS

Change Section 1405.13.2 of the IBC to read:

1405.13.2 Window sills. In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 18 inches (457 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 18 inches (457 mm) shall be fixed or have openings through which a 4-inch (102 mm) diameter sphere cannot pass.

Exception: Openings that are provided with window guards that comply with ASTM F2006 or F2090.

CHAPTER 16

STRUCTURAL DESIGN

Change Section 1609.3 of the IBC to read:

1609.3 Basic wind speed. The basic wind speed, in mph, for the determination of the wind loads shall be determined by Figure 1609. Wind speeds for localities in special wind regions, near mountainous terrains, and near gorges shall be based on elevation. Areas at 4,000 feet in elevation or higher shall use 110 V mph (48.4 m/s) and areas under 4,000 feet in elevation shall use 90 V mph (39.6 m/s). Gorge areas shall be based on the highest recorded speed per locality or in accordance with local jurisdiction requirements determined in accordance with Section 6.5.4 of ASCE 7.

In nonhurricane-prone regions, when the basic wind speed is estimated from regional climatic data, the basic wind speed shall be not less than the wind speed associated with an annual probability of 0.02 (50-year mean recurrence interval), and the estimate shall be adjusted for equivalence to a three-second gust wind speed at 33 feet (10 m) above ground in exposure Category C. The data analysis shall be performed in accordance with Section 6.5.4.2 of ASCE 7.

Add Section 1612.1.1 to the IBC to read:

1612.1.1 Elevation of manufactured homes. New or replacement manufactured homes to be located in any flood hazard zone shall be placed in accordance with the applicable elevation requirements of this code.

Exception: Manufactured homes installed on sites in an existing manufactured home park or subdivision shall be permitted to be placed so that the manufactured home chassis is supported by reinforced piers or other foundation elements of at least equivalent strength that are no less than 36 inches (914 mm) above grade in lieu of being elevated at or above the base flood elevation provided no manufactured home at the same site has sustained flood damage exceeding 50% of the market value of the home before the damage occurred.

CHAPTER 17

STRUCTURAL TESTS AND SPECIAL INSPECTIONS

Change Section 1703.1 of the IBC to read:

1703.1 Approved agency. An approved agency responsible for laboratory testing or special inspections, or both, must comply with the qualification, certification and experience requirements of ASTM E329 or the alternatives listed herein.

Change Section 1703.1.1 of the IBC to read:

1703.1.1 Independence. An approved agency shall be objective and competent. The agency shall also disclose possible conflicts of interest so that objectivity can be confirmed. The special inspector and their agents shall be independent from the person, persons or contractor responsible for the physical construction of the project requiring special inspections.

Change Section 1703.1.3 of the IBC to read:

1703.1.3 Personnel. An approved agency shall employ experienced personnel educated in conducting, supervising and evaluating tests or inspections, or both. Upon request by the building official, documentation shall be provided demonstrating the applicable agency's accreditation as noted in ASTM E329 and individuals' resumes indicating pertinent training, certifications and other qualifications for special inspection personnel associated with the proposed construction requiring special inspections. The building official may prescribe the manner of qualification documentation and frequency of updating information regarding agency or individual inspector approval.

Firms providing special inspection services or individual inspectors seeking approval of alternative certifications or qualifications, or both, listed in ASTM E329 may submit documentation demonstrating equivalency. This documentation may include evidence of meeting other recognized standards or alternative certifications to demonstrate that the minimum qualifications, certification and experience intended by ASTM E329 have been met. The building official may, if satisfied that equivalency has been demonstrated, approve the credentials of the firm or individual.

Change Section 1704.1 of the IBC to read:

1704.1. General. Where application is made for construction as described in this section, the owner shall employ one or more special inspectors to provide inspections during construction on the types of work listed under Section 1704. All individuals or agents performing special inspection functions shall operate under the direct supervision of an RDP in responsible charge of special inspection activities, also known as the "special inspector." The special inspector shall ensure that the individuals under their charge are performing only those special inspections or laboratory testing that are consistent with their knowledge, training and certification for the specified inspection or laboratory testing.

Exceptions:

1. Special inspections are not required for work of a minor nature or as warranted by conditions in the jurisdiction as approved by the building official.

2. Special inspections are not required for building components unless the design involves the practice of professional engineering or architecture as defined by the laws of this Commonwealth and regulations governing the professional registration and certification of engineers and architects.

3. Unless otherwise required by the building official, special inspections are not required for occupancies in Groups R-3, R-4 or R-5 and occupancies in Group U that are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.

Change Section 1704.1.1 of the IBC to read:

1704.1.1 Statement of special inspections. The permit applicant shall submit a statement of special inspections prepared by the RDP in responsible charge in accordance with Section 111.1. This statement shall be in accordance with Section 1705.

Exceptions:

1. A statement of special inspections is not required for structures designed and constructed in accordance with the conventional construction provisions of Section 2308.

2. The statement of special inspections is permitted to be prepared by a qualified person approved by the building official for construction not designed by a registered design professional.

Change category "12" of Table 1704.4 of the IBC to read:

VERIFICATION AND INSPECTION	CONTINUOUS	PERIODIC	REFERENCED STANDARD[a]	IBC REFERENCE
12. Inspect formwork for shape, location and dimensions of the concrete member being formed, shoring and reshoring.	–	X	ACI 318: 6.1, 6.2	1906

CHAPTER 18

SOILS AND FOUNDATIONS

Change the exception to Section 1804.5 of the IBC to read:

Exception: Compacted fill material less than 12 inches (305 mm) in depth need not comply with an approved report, provided it is a natural non-organic material that is not susceptible to swelling when exposed to moisture and it has been compacted to a minimum of 90% Modified Proctor in accordance with ASTM D1557. The compaction shall be verified by a qualified inspector approved by the building official. Material other than natural material may be used as fill material when accompanied by a certification from an RDP and approved by the building official.

Add an exception to Section 1808.1 of the IBC to read:

Exception: One-story detached accessory structures not exceeding 256 square feet (23.78m^2) of building area, provided all of the following conditions are met:

1. The building eave height is 10 feet (3048 mm) or less.

2. The maximum height from the finished floor level to grade does not exceed 18 inches (457.2 mm).

3. The supporting structural elements in direct contact with the ground shall be placed level on firm soil and when such elements are wood they shall be approved pressure preservative treated suitable for ground contact use.

4. The structure is anchored to withstand wind loads as required by this code.

5. The structure shall be of light-frame construction with walls and roof of light weight material, not slate, tile, brick or masonry.

CHAPTER 27

ELECTRICAL

Change Section 2701.1 of the IBC to read:

2701.1 Scope. This chapter governs the electrical components, equipment and systems used in buildings and structures covered by this code. Electrical components, equipment and systems shall be designed and constructed in accordance with the provisions of this code and NFPA 70.

Add Section 2701.1.1 to the IBC to read:

2701.1.1 Changes to NFPA 70. The following change shall be made to NFPA 70:

1. Change Sections 334.10(2) and 334.10(3) of NFPA 70 to read:

   (2) Multifamily dwellings not exceeding four floors above grade and multifamily dwellings of any height permitted to be of Types III, IV and V construction except in any case as prohibited in 334.12.

   (3) Other structures not exceeding four floors above grade and other structures of any height permitted to be of Types III, IV and V construction except in any case as prohibited in 334.12. In structures exceeding four floors above grade, cables shall be concealed within walls, floors or ceilings that provide a thermal barrier of material that has at least a 15-minute finish rating as identified in listings of fire-rated assemblies.

For the purpose of Items 2 and 3 above, the first floor of a building shall be that floor that has 50% or more of the exterior wall surface area level with or above finished grade. One additional level that is the first level and not designed for human habitation and used only for vehicle parking, storage or similar use shall be permitted.

Add Section 2701.1.2 to the IBC to read:

2701.1.2 Temporary connection to dwelling units. The building official shall give permission to energize the electrical service equipment of a one- or two-family dwelling unit when all of the following requirements have been approved:

1. The service wiring and equipment, including the meter socket enclosure, shall be installed and the service wiring terminated.

2. The grounding electrode system shall be installed and terminated.

3. At least one receptacle outlet on a ground fault protected circuit shall be installed and the circuit wiring terminated.

4. Service equipment covers shall be installed.

5. The building roof covering shall be installed.

6. Temporary electrical service equipment shall be suitable for wet locations unless the interior is dry and protected from the weather.

Add Section 2701.1.3 to the IBC to read:

2701.1.3 Assisted living facility generator requirements. Generators installed to comply with regulations for assisted living facilities licensed by the Virginia Department of Social Services shall be permitted to be optional standby systems.

Change Section 2702.2.17 of the IBC to read:

2702.2.17 Group I-2 and I-3 occupancies. Emergency power shall be provided in accordance with Section 407.11 for Group I-2 occupancies licensed by the Virginia Department of Health as a hospital, nursing or hospice facility. Emergency power shall be provided for doors in Group I-3 occupancies in accordance with Section 408.4.2.

CHAPTER 28

MECHANICAL SYSTEMS

Change Section 2801.1 of the IBC to read:

2801.1 Scope. Mechanical appliances, equipment and systems shall be constructed and installed in accordance with this chapter, the International Mechanical Code and the International Fuel Gas Code. Masonry chimneys, fireplaces and barbecues shall comply with the International Mechanical Code and Chapter 21 of this code.

Exception: This code shall not govern the construction of water heaters, boilers and pressure vessels to the extent which they are regulated by the Virginia Boiler and Pressure Vessel Regulations (16 VAC 25-50). However, the building official may require the owner of a structure to submit documentation to substantiate compliance with those regulations.

Add Section 2801.1.1 to the IBC to read:

2801.1.1 Required heating in dwelling units. Heating facilities shall be required in every dwelling unit or portion thereof which is to be rented, leased or let on terms, either expressed or implied, to furnish heat to the occupants thereof. The heating facilities shall be capable of maintaining the room temperature at 65°F (18°C) during the period from October 15 to May 1 during the hours between 6:30 a.m. and 10:30 p.m. of each day and not less than 60°F (16°C) during other hours when measured at a point three feet (914 mm) above the floor and three feet (914 mm) from the exterior walls. The capability of the heating system shall be based on the outside design temperature required for the locality by this code.

Add Section 2801.1.2 to the IBC to read:

2801.1.2 Required heating in nonresidential structures. Heating facilities shall be required in every enclosed occupied space in nonresidential structures. The heating facilities shall be capable of producing sufficient heat during the period from October 1 to May 15 to maintain a temperature of not less than 65°F (18°C) during all working hours. The required room temperature shall be measured at a point three feet (914 mm) above the floor and three feet (914 mm) from the exterior walls.

Processing, storage and operation areas that require cooling or special temperature conditions and areas in which persons are primarily engaged in vigorous physical activities are exempt from these requirements.

Add Section 2801.1.3 to the IBC to read:

2801.1.3 Changes to the International Mechanical Code (IMC). The following changes shall be made to the IMC:

1. Change Section 403.3 of the IMC to read:

   403.3 Outdoor airflow rate. Ventilation systems shall be designed to have the capacity to supply the minimum outdoor airflow rate determined in accordance with this section. The occupant load utilized for design of the ventilation system shall not be less than the number determined from the estimated maximum occupant load rate indicated in Table 403.3. Ventilation rates for occupancies not represented in Table 403.3 shall be those for a listed occupancy classification that is most similar in terms of occupant density, activities and building construction; or shall be determined by an approved engineering analysis. The ventilation system shall be designed to supply the required rate of ventilation air continuously during the period the building is occupied, except as otherwise stated in other provisions of the code.

   With the exception of smoking lounges and other designated areas where smoking is permitted, the ventilation rates in Table 403.3 are based on the absence of smoking in occupiable spaces.

   Exception: The occupant load is not required to be determined based on the estimated maximum occupant load rate indicated in Table 403.3 where approved statistical data document the accuracy of an alternate anticipated occupant density.

2. Add the following areas to Table 403.3 of the IMC in the occupancy classifications shown:

OCCUPANCY CLASSIFICATION	PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE CFM/PERSON	AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE R_a CFM/FT^2 [a]	DEFAULT OCCUPANT DENSITY #/1000 FT^2 [a]	EXHAUST AIRFLOW RATE CFM/FT^2 [a]
Food and beverage service				
Bars or cocktail lounges designated as an area where smoking is permitted[b]	30	-	100	-
Cafeteria or fast food designated as an area where smoking is permitted[b]	20	-	100	-
Dining rooms designated as an area where smoking is permitted[b]	20	-	70	-
Public spaces				
Lounges designated as an area where smoking is permitted[b]	30	-	-	-

3. Add Section 801.1.1 to the IMC to read:

801.1.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection or inspections shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with this code.

2. Vent or chimney systems are clean, free of any obstruction or blockages, defects or deterioration and are in operable condition.

Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

4. Change Section 1101.10 of the IMC to read:

1101.10 Locking access port caps. Refrigerant circuit access ports located outdoors shall be fitted with locking-type tamper-resistant caps or shall be otherwise secured to prevent unauthorized access.

Add Section 2801.1.4 to the IBC to read:

2801.1.4 Changes to the International Fuel Gas Code. The following changes shall be made to the International Fuel Gas Code:

1. Change Section 301.1 of the International Fuel Gas Code to read:

301.1 Scope. This code shall apply to the installation of fuel gas piping systems, fuel gas utilization equipment, and related accessories as follows:

1. Coverage of piping systems shall extend from the point of delivery to the connections with gas utilization equipment. (See "point of delivery.")

2. Systems with an operating pressure of 125 psig (862 kPa gauge) or less.

Piping systems for gas-air mixtures within the flammable range with an operating pressure of 10 psig (69 kPa gauge) or less.

LP-Gas piping systems with an operating pressure of 20 psig (140 kPa gauge) or less.

3. Piping systems requirements shall include design, materials, components, fabrication, assembly, installation, testing and inspection.

4. Requirements for gas utilization equipment and related accessories shall include installation, combustion and ventilation air and venting.

This code shall not apply to the following:

1. Portable LP-Gas equipment of all types that are not connected to a fixed fuel piping system.

2. Installation of farm equipment such as brooders, dehydrators, dryers, and irrigation equipment.

3. Raw material (feedstock) applications except for piping to special atmosphere generators.

4. Oxygen-fuel gas cutting and welding systems.

5. Industrial gas applications using gases such as acetylene and acetylenic compounds, hydrogen, ammonia, carbon monoxide, oxygen, and nitrogen.

6. Petroleum refineries, pipeline compressor or pumping stations, loading terminals, compounding plants, refinery tank farms, and natural gas processing plants.

7. Integrated chemical plants or portions of such plants where flammable or combustible liquids or gases are produced by chemical reactions or used in chemical reactions.

8. LP-Gas installations at utility gas plants.

9. Liquefied natural gas (LNG) installations.

10. Fuel gas piping in power and atomic energy plants.

11. Proprietary items of equipment, apparatus, or instruments such as gas generating sets, compressors, and calorimeters.

12. LP-Gas equipment for vaporization, gas mixing, and gas manufacturing.

13. Temporary LP-Gas piping for buildings under construction or renovation that is not to become part of the permanent piping system.

14. Installation of LP-Gas systems for railroad switch heating.

15. Installation of LP-Gas and compressed natural gas (CNG) systems on vehicles.

16. Except as provided in Section 401.1.1, gas piping, meters, gas pressure regulators, and other appurtenances used by the serving gas supplier in the distribution of gas, other than undiluted LP-Gas.

17. Building design and construction, except as specified herein.

2. Add Section 404.9.3 to the International Fuel Gas Code to read:

404.9.3 Coating application. Joints in gas piping systems shall not be coated prior to testing and approval.

3. Add Section 501.1.1 to the International Fuel Gas Code to read:

501.1.1 Equipment changes. Upon the replacement or new installation of any fuel-burning appliances or equipment in existing buildings, an inspection or inspections shall be conducted to ensure that the connected vent or chimney systems comply with the following:

1. Vent or chimney systems are sized in accordance with this code.

2. Vent or chimney systems are clean, free of any obstruction or blockages, defects or deterioration and are in operable condition.

Where not inspected by the local building department, persons performing such changes or installations shall certify to the building official that the requirements of Items 1 and 2 of this section are met.

CHAPTER 29

PLUMBING SYSTEMS

Change Section 2901.1 of the IBC to read:

2901.1 Scope. The provisions of this chapter and the International Plumbing Code (IPC) shall govern the design and installation of all plumbing systems and equipment, except that as provided for in Section 103.11 for functional design, water supply sources and sewage disposal systems are regulated and approved by the Virginia Department of Health and the Virginia Department of Environmental Quality. The approval of pumping and electrical equipment associated with such water supply sources and sewage disposal systems shall, however, be the responsibility of the building official.

Note: See also the Memorandum of Agreement in the "Related Laws Package," which is available from DHCD.

Add Section 2901.1.1 to the IBC to read:

2901.1.1 Use of Appendix C of the IPC for gray water and rain water recycling systems. In addition to other applicable provisions of the IPC, gray water recycling systems and rain water recycling systems shall comply with the provisions in Appendix C of the IPC. In the use of Appendix C of the IPC for rain water recycling systems, the term "rain water" shall be substituted for the term "gray water." Gray water recycling systems and rain water recycling systems shall be separate systems and shall not be interconnected.

Add Section 2901.1.2 to the IBC to read:

2901.1.2 Changes to the IPC. The following changes shall be made to the IPC:

1. Change Section 301.3 of the IPC to read:

   301.3 Connections to drainage system. All plumbing fixtures, drains, appurtenances and appliances used to receive or discharge liquid wastes or sewage shall be directly connected to the sanitary drainage system of the building or premises, in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems required by Chapter 8.

   Exception: Bathtubs, showers, lavatories, clothes washers and laundry trays shall not be required to discharge to the sanitary drainage system where such fixtures discharge to an approved gray water system or rain water system for flushing of water closets and urinals or for subsurface landscape irrigation.

2. Delete Sections 311 and 311.1 of the IPC.

3. Change Section 602.1 of the IPC to read:

   602.1 General. Every structure equipped with plumbing fixtures and utilized for human occupancy or habitation shall be provided with a potable supply of water in the amounts and at the pressures specified in this chapter. This shall not prohibit the use of reclaimed water distribution systems installed in accordance with this code and the Virginia Water Reclamation and Reuse Regulation (9 VAC 25-740).

4. Change Section 604.1 of the IPC to read:

   604.1 General. The design of the water distribution system, including any reclaimed water distribution systems governed by the Virginia Water Reclamation and Reuse Regulation (9 VAC 25-740), shall conform to accepted engineering practice. Methods utilized to determine pipe sizes shall be approved.

5. Add an exception to Section 608.8 of the IPC to read:

   Exception: Reclaimed water supply systems shall be identified in accordance with the provisions of the Virginia Water Reclamation and Reuse Regulation (9 VAC 25-740).

6. Change Section 608.8.2 of the IPC to read:

   608.8.2 Color. The color of the pipe identification shall be discernable and consistent throughout the building. The color purple shall be used to identify rain and gray water distribution systems.

7. Delete Section 701.9 of the IPC.

8. Add Section 703.6 of the IPC to read:

   703.6 Tracer wire. Nonmetallic sanitary sewer piping that discharges to public systems shall be locatable. An insulated copper tracer wire, 18 AWG minimum in size and suitable for direct burial or an equivalent product, shall be utilized. The wire shall be installed in the same trench as the sewer within 12 inches (305 mm) of the pipe and shall be installed to within five feet (1524 mm) of the building wall to the point where the building sewer intersects with the public system. At a minimum, one end of the wire shall terminate above grade in an accessible location that is resistant to physical damage, such as with a cleanout or at the building wall.

CHAPTER 30

ELEVATORS AND CONVEYING SYSTEMS

Change Section 3002.4 of the IBC to read:

3002.4 Elevator car to accommodate ambulance stretcher. Where elevators are provided in buildings four or more stories above, or four or more stories below, grade plane, at least one elevator shall be provided for fire department emergency access to all floors. The elevator car shall be of such a size and arrangement to accommodate an ambulance stretcher 24 inches by 84 inches (610 mm by 2134 mm) with not less than five-inch (127 mm) radius corners, in the horizontal, open position and shall be identified by the international symbol for emergency medical services (star of life). The symbol shall not be less than three inches (76 mm) high and shall be placed inside on both sides of the hoistway door frame on the designated and alternate landing floors required to be established by ASME A17.1.

Exception: Elevators in multistory dwelling units or guest rooms.

Add Section 3003.2.1 to the IBC to read:

3003.2.1 Standardized fire service elevator keys. Where a key is required to operate the emergency function of an elevator, the key shall be a standardized fire service key in accordance with the Virginia Statewide Fire Prevention Code (13 VAC 5-51).

Change Section 3006.4 of the IBC to read:

3006.4 Machine rooms and machinery spaces. Elevator machine rooms, rooms housing elevator controllers, and machinery spaces shall be enclosed with fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both. The fire-resistance rating shall not be less than the required rating of the hoistway enclosure served by the machinery. Openings in the fire barriers shall be protected with assemblies having a fire protection rating not less than that required for the hoistway enclosure doors.

Exceptions:

1. Where machine rooms, rooms housing elevator controllers, and machinery spaces do not abut and have no openings to the hoistway enclosure they serve, the fire barriers constructed in accordance with Section 707 or horizontal assemblies constructed in accordance with Section 712, or both, shall be permitted to be reduced to a one-hour fire-resistance rating.

2. In buildings four stories or less above grade plane when machine rooms, rooms housing elevator controllers, and machinery rooms do not abut and have no openings to the hoistway enclosure they serve, the machine room, room housing elevator controllers, and machinery spaces are not required to be fire-resistance rated.

Add Section 3006.7 to the IBC to read:

3006.7 Machine-room-less designs. Where machine-room-less designs are utilized they shall comply with the provisions of ASME A17.1 and incorporate the following:

1. Where the elevator car-top will be used as a work platform, it shall be equipped with permanently installed guards on all open sides. Guards shall be permitted to be of collapsible design, but otherwise must conform to all applicable requirements of this code for guards.

2. Where the equipment manufacturer's procedures for machinery removal and replacement depend on overhead structural support or lifting points, such supports or lifting points shall be permanently installed at the time of initial equipment installation.

3. Where the structure that the elevator will be located in is required to be fully sprinklered by this code, the hoistway that the elevator machine is located in shall be equipped with a fire suppression system as a machine room in accordance with NFPA 13. Smoke detectors for the automatic initiation of Phase I Emergency Recall Operation, and heat detectors or other approved devices that automatically disconnect the main line power supply to the elevators, shall be installed within the hoistway.

Change Section 3008.1 of the IBC to read:

3008.1 General. Where elevators in buildings greater than 420 feet (128 016 mm) in building height are to be used for occupant self-evacuation during fires, all passenger elevators for general public use shall comply with this section.

CHAPTER 33

SAFEGUARDS DURING CONSTRUCTION

Delete IBC Sections 3305 and 3305.1.

CHAPTER 34

EXISTING STRUCTURES

Change Section 3401.1 of the IBC to read:

3401.1 Scope. The provisions of this chapter and the applicable requirements of Chapter 1 shall control the alteration, repair, addition and change of occupancy of existing structures.

Delete IBC Sections 3401.2, 3401.3, 3401.4, and 3401.5.

Delete IBC Sections 3403, 3404, 3405, and 3406.

Change Section 3407.1 of the IBC to read:

3407.1 Standards for replacement glass. In accordance with Section 36-99.2 of the Code of Virginia, any replacement glass installed in buildings constructed prior to the first edition of the USBC shall meet the quality and installation standards for glass installed in new buildings as are in effect at the time of installation. In addition, as a requirement of this code, the installation or replacement of glass in buildings constructed under any edition of the USBC shall be as required for new installations.

Delete IBC Section 3408.

Delete IBC Section 3410.

Change Section 3412.2 of the IBC to read:

3412.2 Applicability. When specifically requested by an owner or an owner's agent in structures where there is work involving additions, alterations or changes of occupancy, the provisions in Sections 3412.2.1 through 3412.2.5 shall apply to existing occupancies that will continue to be, or are proposed to be, in Groups A, B, E, F, M, R, S and U. These provisions shall not apply to buildings with occupancies in Group H or I.

Add an exception to Section 3412.2.1 of the IBC to read:

Exception: Plumbing, mechanical and electrical systems in buildings undergoing a change of occupancy shall be subject to any applicable requirements of Section 103.3 of this code.

Change Section 3412.2.5 of the IBC to read:

3412.2.5 Accessibility requirements. All portions of the buildings proposed for change of occupancy and all alterations to existing buildings shall conform to the applicable accessibility provisions of Section 3411.

Add IBC Section 3413 Retrofit Requirements.

Add Section 3413.1 to the IBC to read:

3413.1 Scope. In accordance with Section 103.7 and as setout herein, the following buildings are required to be provided with certain fire protection equipment or systems or other retrofitted components.

Add Section 3413.2 to the IBC to read:

3413.2 Smoke detectors in colleges and universities. In accordance with Section 36-99.3 of the Code of Virginia, college and university buildings containing dormitories for sleeping purposes shall be provided with battery-powered or AC-powered smoke detector devices installed therein in accordance with this code in effect on July 1, 1982. All public and private college and university dormitories shall have installed such detectors regardless of when the building was constructed. The chief administrative office of the college or university shall obtain a certificate of compliance with the provisions of this subsection from the building official of the locality in which the college or university is located or in the case of state-owned buildings, from the Director of the Virginia Department of General Services. The provisions of this section shall not apply to any dormitory at a state-supported military college or university which is patrolled 24 hours a day by military guards.

Add Section 3413.3 to the IBC to read:

3413.3 Smoke detectors in certain juvenile care facilities. In accordance with Section 36-99.4 of the Code of Virginia, battery-powered or AC-powered smoke detectors shall be installed in all local and regional detention homes, group homes, and other residential care facilities for children and juveniles which are operated by or under the auspices of the Virginia Department of Juvenile Justice, regardless of when the building was constructed, by July 1, 1986, in accordance with the provisions of this code that were in effect on July 1, 1984. Administrators of such homes and facilities shall be responsible for the installation of the smoke detector devices.

Add Section 3413.4 to the IBC to read:

3413.4 Smoke detectors for the deaf and hearing-impaired. In accordance with Section 36-99.5 of the Code of Virginia, smoke detectors providing an effective intensity of not less than 100 candela to warn a deaf or hearing-impaired individual shall be provided, upon request by the occupant to the landlord or proprietor, to any deaf or hearing-impaired occupant of any of the following occupancies, regardless of when constructed:

1. All dormitory buildings arranged for the shelter and sleeping accommodations of more than 20 individuals;

2. All multiple-family dwellings having more than two dwelling units, including all dormitories, boarding and lodging houses arranged for shelter and sleeping accommodations of more than five individuals; or

3. All buildings arranged for use of one-family or two-family dwelling units.

A tenant shall be responsible for the maintenance and operation of the smoke detector in the tenant's unit.

A hotel or motel shall have available no fewer than one such smoke detector for each 70 units or portion thereof, except that this requirement shall not apply to any hotel or motel with fewer than 35 units. The proprietor of the hotel or motel shall post in a conspicuous place at the registration desk or counter a permanent sign stating the availability of smoke detectors for the hearing impaired. Visual detectors shall be provided for all meeting rooms for which an advance request has been made.

Add Sections 3413.5, 3413.5.1, and 3413.5.2 to the IBC to read:

3413.5 Assisted living facilities (formerly known as adult care residences or homes for adults). Existing assisted living facilities licensed by the Virginia Department of Social Services shall comply with this section.

3413.5.1 Fire protective signaling system and fire detection system. A fire protective signaling system and an automatic fire detection system meeting the requirements of the USBC, Volume I, 1987 Edition, Third Amendment, shall be installed in assisted living facilities by August 1, 1994.

Exception: Assisted living facilities that are equipped throughout with a fire protective signaling system and an automatic fire detection system.

3413.5.2 Single and multiple station smoke detectors. Battery or AC-powered single and multiple station smoke detectors meeting the requirements of the USBC, Volume I, 1987 Edition, Third Amendment, shall be installed in assisted living facilities by August 1, 1994.

Exception: Assisted living facilities that are equipped throughout with single and multiple station smoke detectors.

Add Section 3413.6 to the IBC to read:

3413.6 Smoke detectors in buildings containing dwelling units. AC-powered smoke detectors with battery backup or an equivalent device shall be required to be installed to replace a defective or inoperative battery-powered smoke detector located in buildings containing one or more dwelling units or rooming houses offering to rent overnight sleeping accommodations, when it is determined by the building official that the responsible party of such building or dwelling unit fails to maintain battery-powered smoke detectors in working condition.

Add Section 3413.7 to the IBC to read:

3413.7 Fire suppression, fire alarm and fire detection systems in nursing homes and facilities. Fire suppression systems as required by the edition of this code in effect on October 1, 1990, shall be installed in all nursing facilities licensed by the Virginia Department of Health by January 1, 1993, regardless of when such facilities or institutions were constructed. Units consisting of certified long-term care beds located on the ground floor of general hospitals shall be exempt from the requirements of this section.

Fire alarm or fire detector systems, or both, as required by the edition of this code in effect on October 1, 1990, shall be installed in all nursing homes and nursing facilities licensed by the Virginia Department of Health by August 1, 1994.

Add Section 3413.8 to the IBC to read:

3413.8 Fire suppression systems in hospitals. Fire suppression systems shall be installed in all hospitals licensed by the Virginia Department of Health as required by the edition of this code in effect on October 1, 1995, regardless of when such facilities were constructed.

Add Section 3413.9 to the IBC to read:

3413.9 Identification of handicapped parking spaces by above grade signs. All parking spaces reserved for the use of handicapped persons shall be identified by above grade signs, regardless of whether identification of such spaces by above grade signs was required when any particular space was reserved for the use of handicapped persons. A sign or symbol painted or otherwise displayed on the pavement of a parking space shall not constitute an above grade sign. Any parking space not identified by an above grade sign shall not be a parking space reserved for the handicapped within the meaning of this section. All above grade handicapped parking space signs shall have the bottom edge of the sign no lower than four feet (1219 mm) nor higher than seven feet (2133 mm) above the parking surface. Such signs shall be designed and constructed in accordance with the provisions of Chapter 11 of this code. All disabled parking signs shall include the following language: PENALTY, $100-500 Fine, TOW-AWAY ZONE. Such language may be placed on a separate sign and attached below existing above grade disabled parking signs, provided that the bottom edge of the attached sign is no lower than four feet above the parking surface.

Add Section 3413.10 to the IBC to read:

3413.10 Smoke detectors in hotels and motels. Smoke detectors shall be installed in hotels and motels as required by the edition of VR 394-01-22, USBC, Volume II, in effect on March 1, 1990, by the dates indicated, regardless of when constructed.

Add Section 3413.11 to the IBC to read:

3413.11 Sprinkler systems in hotel and motels. By September 1, 1997, an automatic sprinkler system shall be installed in hotels and motels as required by the edition of VR 394-01-22, USBC, Volume II, in effect on March 1, 1990, regardless of when constructed.

Add Section 3413.12 to the IBC to read:

3413.12 Fire suppression systems in dormitories. An automatic fire suppression system shall be provided throughout all buildings having a Group R-2 fire area which are more than 75 feet (22,860 mm) or six stories above the lowest level of exit discharge and which are used, in whole or in part, as a dormitory to house students by any public or private institution of higher education, regardless of when such buildings were constructed, in accordance with the edition of this code in effect on August 20, 1997, and the requirements for sprinkler systems under the edition of the NFPA 13 standard referenced by that code. The automatic fire suppression system shall be installed by September 1, 1999. The chief administrative office of the college or university shall obtain a certificate of compliance from the building official of the locality in which the college or university is located or in the case of state-owned buildings, from the Director of the Virginia Department of General Services.

Exceptions:

1. Buildings equipped with an automatic fire suppression system in accordance with Section 903.3.1.1 or the 1983 or later editions of NFPA 13.

2. Any dormitory at a state-supported military college or university which is patrolled 24 hours a day by military guards.

3. Application of the requirements of this section shall be modified in accordance with the following:

   3.1. Building systems, equipment or components other than the fire suppression system shall not be required to be added or upgraded except as necessary for the installation of the fire suppression

system and shall only be required to be added or upgraded where the installation of the fire suppression system creates an unsafe condition.

3.2. Residential sprinklers shall be used in all sleeping rooms. Other sprinklers shall be quick response or residential unless deemed unsuitable for a space. Standard response sprinklers shall be used in elevator hoist ways and machine rooms.

3.3. Sprinklers shall not be required in wardrobes in sleeping rooms that are considered part of the building construction or in closets in sleeping rooms, when such wardrobes or closets (i) do not exceed 24 square feet (2.23 m^2) in area, (ii) have the smallest dimension less than 36 inches (914 mm), and (iii) comply with all of the following:

3.3.1. A single station smoke detector monitored by the building fire alarm system is installed in the room containing the wardrobe or closet that will activate the general alarm for the building if the single station smoke detector is not cleared within five minutes after activation.

3.3.2. The minimum number of sprinklers required for calculating the hydraulic demand of the system for the room shall be increased by two and the two additional sprinklers shall be corridor sprinklers where the wardrobe or closet is used to divide the room. Rooms divided by a wardrobe or closet shall be considered one room for the purpose of this requirement.

3.3.3. The ceiling of the wardrobe, closet or room shall have a fire resistance rating of not less than 1/2 hour.

3.4. Not more than one sprinkler shall be required in bathrooms within sleeping rooms or suites having a floor area between 55 square feet (5.12 m^2) and 120 square feet (11.16 m^2) provided the sprinkler is located to protect the lavatory area and the plumbing fixtures are of a noncombustible material.

3.5. Existing standpipe residual pressure shall be permitted to be reduced when the standpipe serves as the water supply for the fire suppression system provided the water supply requirements of NFPA 13-94 are met.

3.6. Limited service controllers shall be permitted for fire pumps when used in accordance with their listing.

3.7. Where a standby power system is required, a source of power in accordance with Section 701-11 (d) or 701-11 (e) of NFPA 70—96 shall be permitted.

Add Section 3413.13 to the IBC to read:

3413.13 Fire extinguishers and smoke detectors in SRCF's. SRCF's shall be provided with at least one approved type ABC portable fire extinguisher with a minimum rating of 2-A:10-B:C installed in each kitchen. In addition, SRCF's shall provide at least one approved and properly installed battery operated smoke detector outside of each sleeping area in the vicinity of bedrooms and bedroom hallways and on each additional floor.

Add Section 3413.14 to the IBC to read:

3413.14 Smoke detectors in adult day care centers. Battery-powered or AC-powered smoke detector devices shall be installed in all adult day care centers licensed by the Virginia Department of Social Services, regardless of when the building was constructed. The location and installation of the smoke detectors shall be determined by the provisions of this code in effect on October 1, 1990. The licensee shall obtain a certificate of compliance from the building official of the locality in which the center is located, or in the case of state-owned buildings, from the Director of the Virginia Department of General Services.

Add Section 3413.15 to the IBC to read:

3413.15 Posting of occupant load. Every room or space that is an assembly occupancy, and where the occupant load of that room or space is 50 or more, shall have the occupant load of the room or space as determined by the building official posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design and shall be maintained by the owner or authorized agent.

Add Section 3413.16 to the IBC to read:

3413.16 ALFSTs. Existing ALFSTs, regardless of when constructed, shall, by October 1, 2011, meet the applicable requirements of API 653 and TFI RMIP for suitability for service and inspections and shall provide a secondary containment system complying with Section 425.3.

CHAPTER 35

REFERENCED STANDARDS

Change the referenced standards in Chapter 35 of the IBC as follows (standards not shown remain the same):

API

American Petroleum Institute
1220 L Street, Northwest
Washington, DC 20005

Standard reference number	Title	Referenced in code section number
RP 650–(2009)	Welded Steel Tanks for Oil Storage	425.2
RP 653–(2009)	Tank Inspection, Repair, Alteration and Reconstruction	425.4, 425.5, 3413.16

ASME

American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

Standard reference number	Title	Referenced in code section number
A17.1/CSA B44-2007	Safety Code for Elevators and Escalators with 2008 and 2009 addenda	907.3.3, 911.1.5, 1007.4, 1607.8.1, 1613.6.5, 3001.2, 3001.4, 3002.5, 3003.2, 3007.1, 3008.3, 3008.12, 3008.14.1, 3411.8.2

ASTM

ASTM International
100 Barr Harbor Drive
West Conshohocken, PA 19428-2959

Standard reference number	Title	Referenced in code section number
E 329–02	Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction	1703.1, 1703.1.3

TFI

The Fertilizer Institute
820 First Street, NE, Suite 430
Washington, DC 20002

Standard reference number	Title	Referenced in code section number
RMIP–09	Aboveground Storage Tanks Containing Liquid Fertilizer, Recommended Mechanical Integrity Practices	425.2, 425.4, 3413.16

UL

Underwriters Laboratories, Inc.
333 Pfingsten Road
Northbrook, IL 60062

Standard reference number	Title	Referenced in code section number
2034–08	Standard for Single- and Multiple-station Carbon Monoxide Alarms	908.7.1

APPENDIX E

SUPPLEMENTARY ACCESSIBILITY REQUIREMENTS

Appendix E of the IBC shall be part of this code.

APPENDIX F

RODENTPROOFING

The following provisions of Appendix F of the IBC are part of this code:

F101.2 Foundation wall ventilation openings.

F101.6 Pier and wood construction. (Includes all provisions.)

APPENDIX H

SIGNS

The following provisions of Appendix H of the IBC are part of this code:

H101.2 Signs exempt from permits.

H102 Definitions. (Includes all definitions.)

H103 Location. (Includes Section H103.1.)

H105 through H114. (Includes all provisions.)

APPENDIX I

PATIO COVERS

The following provisions from Appendix I of the IBC are part of this code:

I101 through I104 (Includes all provisions.)