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CHARLES BORSTEL
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PROFESSIONAL LICENSURE

BOARD OF BUILDING REGULATIONS AND STANDARDS

NOTICE OF MEETING

In accordance with the provisions of G.L. c. 30A § 20, notice is hereby given that the Board of Building Regulations and Standards will convene a regular monthly meeting on:

February 13, 2018 @ 1:00 p.m. until approximately 4 p.m.

Division of Professional Licensure (DPL) Office
50 Maple Street in Milford 01757-3698
Milford is a secure facility. Please allow time to be checked-in at the front desk.

Posted on February 5, 2018 @ 10 a.m.

It is anticipated that the topics shown below will be discussed at the aforementioned meeting:

AGENDA

Roll Call, by BBRS Chair:

John Couture, Chair present absent
Kerr Dietz, Vice Chair present absent
Richard Crowley, Second Vice Chair present absent
Steve Frederickson present absent
Kevin Gallagher present absent
Cheryl Lavalley present absent

Robert Anderson, or designee present absent
Peter Ostroskey, or designee present absent
Michael McDowell present absent
Susan Gleason present absent
Lisa Davey present absent

Regular Meeting:

1. **Review\Vote** approval of January 9, 2018 BBRS draft meeting minutes.
2. **Review\Vote** approval of January 3, 2018 BOCC draft meeting minutes.
3. **Review** comments received relative to Code Change Proposals presented @ the November, 2017 Public Hearing and **Vote** on any desired changes.
- **Proposed Coastal A Zone Amendments** - The proposal intends to re-insert *Coastal A Zone Provisions* into varied sections of the International Building Code (IBC) and International Residential Code (IRC). Proposals and comments received are attached to this agenda.
- **Proposed House Keeping Amendments Associated with Flood Hazard Provisions** - The proposal intends clarify certain flood hazard requirements of the International Existing Buildings Code (IEBC) and International Residential Code (IRC). Proposals are attached to this agenda.



- **Proposed Amendment to Concrete Testing Lab Personnel Certifications** – The proposal intends to revise certification classifications for certain concrete testing lab personnel as established by Chapter 110.R1. Proposal attached to agenda.
 - **Proposed Amendment to Section 1203.2** – The proposal intends to revise certain energy conservation\insulation requirements of the International Building Code (IBC), International Residential Code (IRC) and International Existing Building Code (IEBC). Proposals are attached to this agenda.
 - **Proposed Amendment to Section 110.R3.6.2** – The proposal intends to revise the referenced sections of the manufactured buildings regulations concerning certain plan submittals. Proposal attached to agenda.
 - **Proposed Amendment to Chapter 110.R3** – The proposal intends to revise certain sections of Chapter 110.R3 concerning construction trailer requirements. Proposal attached to agenda.
 - **Proposed Amendment to Construction Supervisor License Requirements** – The proposal intends to revise certain sections of Chapters 1 and Chapter 110.R5 concerning the new for construction supervisor license supervision. Proposal attached to agenda.
 - **Proposed Amendment to Construction Supervisor License Continuing Education Requirements** – The proposal intends to revise sections of Chapter 110.R5 concerning continuing education requirements. Proposal and comments received are attached to agenda.
 - **Proposed Amendment to Section AJ102.3.2 and AJ102.3.3** – The proposal intends to revise the referenced sections of the International Residential Code concerning certain smoke and c\o detection requirements. Proposal attached to agenda.
 - **Proposed Amendment to Reconsider EV Charging Stations** – The proposal intends to revise certain sections of the International Energy Conservation Code to require fit-up for EV. Proposal and comments received are attached to agenda.
4. **Discuss** follow-up actions regarding manufactured buildings program.
 - **Establish Working Group Membership**
 5. **Discuss** proposals, procedures and timelines for May Public Hearing.
 - **2018 International Energy Conservation Code**
 - **Tiny Houses**
 - **Micro Units**
 - **Solar Readiness**
 - **NFPA 241**
 - **NFPA 130**
 - **Swimming Pool & Spa Code**
 6. **Discuss** March, June & July meeting schedule.
 7. **Discuss\Interpret** sprinkler requirements for new transient lodging facilities, including bed and breakfast facilities, and newly created rooms that would be leased to transient lodgers.
 8. **Review\Vote** request for interpretation of sprinklers in large, renovated (*enlarged*) single- or two-family homes, exceeding 14,400 square feet.
 9. **Update** concerning recent construction fires and NFPA 241 construction control related issues.

10. **Discuss** the Fire Prevention Association of Massachusetts (FPAM).
 - Lt. Chris Towski
11. **Discuss** reflected light issues.
12. **Discuss\Vote** fire service access elevator narrative requirements.
13. **Consider\Vote** approval of 53 new CSLs issued in the month of December, 2017.
14. **Discuss\Vote** CSL Average Passing Score/Medical/Military/Continuing Education Requirements.
 - None this month
15. **Discuss** other matters not reasonably anticipated 2 business days in advance of meeting.

Insert (or delete) the following language:

R107.1.4 Information for construction in flood hazard areas. For buildings and structures located in whole or in part in flood hazard areas as established by Table R301.2(1), construction documents shall include:

1. Delineation of flood hazard areas, floodway boundaries and flood zones and the design flood elevation, as appropriate.
2. The elevation of the proposed lowest floor, including basement; in areas of shallow flooding (AO Zones), the height of the proposed lowest floor, including basement, above the highest adjacent grade.
3. The elevation of the bottom of the lowest horizontal structural member in coastal high hazard areas (V Zones) and in Coastal A Zones where such zones are delineated on flood hazard maps identified in Section 322.1.1.
4. If design flood elevations are not included on the community's Flood Insurance Rate Map (FIRM), the building official and the applicant shall obtain and reasonably utilize any design flood elevation and floodway data available from other sources.

R301.2.4 Revise subsection as follows:

R301.2.4 Floodplain construction. Buildings and structures constructed in whole or in part in flood hazard areas (including AO, A, Coastal A or V Zones) or *coastal dunes* as established in Section R322.1.1, and substantial improvement and restoration of substantial damage of buildings and structures in flood hazard areas or *coastal dunes*, shall be designed and constructed in accordance with Section R322. Buildings and structures that are located in more than one flood hazard area or *coastal dune* shall comply with the most restrictive provisions of all those flood hazard areas and *coastal dunes*. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.1 Replace the section as follows:

R322.1 General. Buildings and structures constructed in whole or in part in flood hazard areas and *coastal dunes*, and substantial improvement and restoration of substantial damage of buildings and structures in those areas shall be designed and constructed in accordance with the provisions contained in this section. Buildings and structures located in more than one flood hazard area and *coastal dunes* shall comply with the most restrictive provisions. Buildings and structures located in whole or in part in identified floodways shall be designed and constructed in accordance with ASCE 24. See Section R105.3.1.1 for substantial improvements and damage and see Section R309 for garage requirements. Flood hazard areas include the following:

1. AO zones, where shallow flooding exists without waves,
2. A zones, **and**
3. Coastal A zones, where wave heights are greater than or equal to 1 1/2 feet but less than 3 feet, and
4. ~~3.~~ V zones, where high velocity wave action exists and wave heights are greater than or equal to 3-feet.

R322.1.1 Replace the subsection as follows:

R322.1.1 Base flood elevation, flood maps, delineations and definitions. For base flood elevation and mapping resources see the following:

1. Flood hazard areas and base flood elevations are identified on a community's current effective Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map (FHBM), whichever is applicable, and further defined in the current effective Flood Insurance Study (FIS) where applicable.
2. Floodways are delineated on a community's current effective FIRM or Flood Boundary & Floodway Map, whichever is applicable, and further defined in the current effective FIS.
3. If a community has received a preliminary FIRM and FIS from FEMA, and has been issued a Letter of Final Determination (LFD) from FEMA, the community shall use the preliminary FIRM and FIS to determine applicable flood zones, base flood elevations and floodways as of the date of the LFD.
4. Coastal A zones are delineated on the National Flood Hazard Layer (available on FEMA's Map Service Center).
5. ~~4.~~ Coastal wetlands resource areas are defined on the "Map of Coastal Wetland Resources for Building Officials."

R322.1.4 Revise the subsection as follows:

R322.1.4 Establishing the design flood elevation. The design flood elevation in Massachusetts shall be as follows:

1. For AO Zones the design flood elevation shall be the elevation of the highest adjacent grade plus the flood depth specified on the FIRM plus one (1) foot or the elevation of the highest adjacent grade plus three (3) feet if no flood depth is specified. See Section R322.2 for requirements.
2. For A Zones the design flood elevation shall be the base flood elevation plus one (1) foot. See Section R322.2 for requirements.
3. For Coastal A Zones and V Zones the design flood elevation shall be the base flood elevation plus two (2) feet. See Section R322.3 for requirements.
4. For coastal dunes see Section R322.4 for requirements.

R322.1.9 Revise the subsection as follows:

R322.1.9 Manufactured homes. The bottom of the frame of new and replacement *manufactured homes* on foundations that conform to the requirements of Section R322.2 or R322.3 and R322.4, as applicable, shall be elevated to or above the elevations specified in Section R322.2 (*flood hazard areas* including AO and A Zones) or R322.3 in coastal high-hazard areas (V Zones and Coastal A Zones) and R322.4 in *coastal dunes*. The anchor and tie-down requirements of the applicable state or federal requirements shall apply. The foundation and anchorage of *manufactured homes* to be located in identified floodways shall be designed and constructed in accordance with ASCE 24.

R322.3 through R322.3.7 Revise the section and subsections as follows:

R322.3 Coastal high-hazard areas (including V Zones and Coastal A Zones). Buildings and structures constructed in whole or in part in V and Coastal A Zones shall be designed and constructed in accordance with Sections R322.3.1 through R322.3.6.

R322.3.1 Location and site preparation. New buildings and buildings that are determined to be substantially improved pursuant to Section R105.3.1.1 shall be located landward of the reach of mean high tide.

R322.3.2 Elevation requirements.

1. Buildings and structures, shall be elevated so that the bottom of the lowest portion of horizontal structural members supporting the lowest floor, with the exception of pilings, pile caps, columns, grade beams and bracing, is elevated to the design flood elevation.
2. Basement floors that are below *grade* on all sides are prohibited.
3. The use of fill for structural support is prohibited.
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways. Fill is prohibited unless such fill is constructed and/or placed to avoid diversion of water and waves toward any building or structure.
5. Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.
6. For lateral additions in V Zones that are not a substantial improvement, only the addition shall be elevated so that the bottom of the lowest horizontal structural member of the lowest floor with the exception of pilings, pile caps, columns, grade beams and bracing, is located at an elevation that is at least the design flood elevation.

R322.3.3 Foundations. Buildings and structures erected in coastal high-hazard areas **and Coastal A Zones** shall be supported on pilings or columns and shall be adequately anchored to such pilings or columns. The space below the elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.4. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water-loading values used shall be those associated with the design flood. Windloading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Spread footing, mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the spread footing, mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. If permitted, spread footing, mat, raft or other foundations that support columns shall be designed in accordance with ASCE 24. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundations are designed to resist the additional flood load.

Exception: In Coastal A Zones, stem wall foundations supporting a floor system above and backfilled with soil or gravel to the underside of the floor system shall be permitted provided the foundations are designed to account for wave action, debris impact, erosion and local scour. Where soils are susceptible to erosion and local scour, stem wall foundations shall have deep footings to account for the loss of soil.

Insert the following definitions in Chapter 2.

COASTAL A ZONE. Area within a *special flood hazard area*, landward of a V zone or landward of an open coast without mapped *coastal high hazard areas*. In a coastal A zone, the principal source of flooding must be astronomical tides, storm surges, seiches or tsunamis, not riverine flooding. During the base flood conditions, the potential for breaking wave height shall be greater than or equal to 1 ½ feet (457 mm). The inland limit of the coastal A zone is the Limit of Moderate Wave Action on the National Flood Hazard Layer (available on FEMA's Map Service Center).

LIMIT OF MODERATE WAVE ACTION. Line shown on the National Flood Hazard Layer to indicate the inland limit of the 1 ½ - foot (457 mm) breaking wave height during the base flood.

1603.1.7 Revise subsection as follows:

1603.1.7 Flood design data. For buildings located in whole or in part in *flood hazard areas* as established in Section 1612.3, the documentation pertaining to design, if required in Section 1612.5, shall be included and the following information, referenced to the datum of the *base flood elevation*, shall be shown, regardless of whether flood loads govern the design of the building:

1. Flood design class assigned according to ASCE 24.
2. In *flood hazard areas* other than *coastal high hazard areas* or *coastal A zones*, the elevation of the proposed lowest floor, including the basement.
3. In *flood hazard areas* other than *coastal high hazard areas* or *coastal A zones*, the elevation to which any nonresidential building will be dry floodproofed.
4. In *coastal high hazard areas* and *coastal A zones*, the proposed elevation of the bottom of the lowest horizontal structural member of the lowest floor, including the basement.

1612.4 Revise section as follows:

1612.4 Design and construction. The design and construction of buildings and structures located in flood hazard areas, including coastal high hazard areas and coastal A zones, shall be in accordance with Chapter 5 of ASCE 7 and ASCE 24. ~~In using ASCE 24-14, delete all references to coastal A zone standards.~~ For minimum elevation requirements for lowest floor, bottom of lowest horizontal structural member, utilities, flood-resistant materials and wet and dry floodproofing refer to tables in ASCE 24 which are to be amended as shown below. The design and construction of buildings and structures located in coastal dunes shall be in accordance with Appendix G.

DRAFT 9TH ED. BASE CODE PROPOSED AMENDMENTS **REINSERTING** COASTAL A ZONE REFERENCES

		Flood Design Class 1	Flood Design Class 2	Flood Design Class 3	Flood Design Class 4
Minimum Elevation* of Lowest Floor (Zone A: ASCE 24-14 Table 2-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation of Bottom of Lowest Horizontal Structural Member (ASCE 24-14 Table 4-1)	Zone V/ Coastal A	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation Below Which Flood-Damage-Resistant Materials Shall be Used (Table ASCE 24-14 5-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation** of Utilities and Equipment (ASCE 24-14 Table 7-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
Minimum Elevation of Dry Floodproofing of non-residential structures and non-residential portions of mixed-use buildings (ASCE 24-14 Table 6-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	Not Permitted	Not Permitted	Not Permitted	Not Permitted
Minimum Elevation of Wet Floodproofing*** (ASCE 24-14 Table 6-1)	Zone A	BFE + 1 ft	BFE + 1 ft	BFE + 1 ft	BFE + 2 ft or 500-year flood elevation, whichever is higher
	Zone V/ Coastal A	Not Permitted	Not Permitted	Not Permitted	Not Permitted
<p>*Flood Design Class 1 structures shall be allowed below the minimum elevation if the structure meets the wet floodproofing requirements of ASCE 24-14 Section 6.3.</p> <p>**Unless otherwise permitted by ASCE 24-14 Chapter 7.</p> <p>***Only if permitted by ASCE 24-14 Section 6.3.1.</p>					

Note: In V zones location of utilities and equipment to the indicated level is required. Protection of utilities and equipment below the indicated level is not accepted.



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January 30, 2018

Mr. Richard Crowley, Chair
Mr. Robert Anderson, Chief of Inspections
Board of Building Regulations and Standards
Office of Public Safety and Inspections
One Ashburton Place – Room 1301
Boston, MA 02108

Dear Mr. Crowley, Mr. Anderson, and Members of the Board—

I am writing to express my strong support for a proposed amendment to the 9th Edition of the State Building Code that is before the Board of Building Regulations and Standards.

The amendment under your consideration proposes standards that require new or substantially modified buildings in the Coastal A Zone, which is a high-hazard flood zone subject to breaking waves between 1.5 and 3 feet, to be elevated and supported on piles, or similar foundations. These standards are based on the 2015 International Building Code which, as you know, is the global standard for comprehensive building safety and fire prevention. In 2010, the 8th Edition State Building Code adopted the 2009 International Building Codes (I-Code) standard which included provisions requiring that new or substantially modified buildings in V Zones—the coastal high hazard area subject to breaking waves 3 feet and higher—to be elevated 2 feet above the mapped Base Flood Elevation. The 2015 I-Code standards for Coastal A Zones reflect data and information from post-storm damage assessments that find that typical A Zone construction practices (e.g., wood-frame, light gauge steel or masonry walls on shallow footings or slabs, etc.) are subject to damage when exposed to less than 3-foot breaking waves.

The 2015 I-Code incorporates by reference the American Society of Civil Engineers' Standards for Flood Resistant Design and Construction (2005 and 2014) and specifies that new (or