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**BOARD OF BUILDING REGULATIONS AND STANDARDS**

**Geotechnical Advisory Committee (GAC) Meeting Minutes**

December 15, 2021

The Division of Professional Licensure Office  
1000 Washington Street - Boston, MA 02118

*This was a virtual Microsoft Teams meeting.*

**Roll Call, by GAC Chair:**

Chris Erikson, Chair  
Scott DiFiore  
John Roma  
Michael Oakland  
Damian Siebert

☒ present ☐ absent  
☒ present ☐ absent  
☒ present ☐ absent  
☐ present ☒ absent  
☒ present ☐ absent

Martin Rodick  
Jake McManus  
James Christensen  
William Solberg  
Rob Anderson

☒ present ☐ absent  
☒ present ☐ absent  
☒ present ☐ absent  
☒ present ☐ absent  
☒ present ☐ absent

**General notes on format of these minutes**

- *These minutes represent general points discussed during the meeting. The minutes are **not** intended to be a verbatim account of discussions.*
- *Topics as numbered may\ may not be in the same order as they appear on the meeting agenda.*
- *The meeting agenda is listed as **EXHIBIT A**; others are listed sequentially as addresses during the meeting.*

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1. **Review minutes for the GAC December 1, 2021 meeting (EXHIBIT B).**

On a **MOTION** by Chris Erikson, seconded by Damian Siebert, it was unanimously agreed, by **Roll Call Vote**, to approve the minutes with the following correction:

Page 3, first bullet – change *Geopar* to *Geopier*.

2. **Discuss proposed amendments and new content of 2021 IBC, Chapter 18, for inclusion in the Tenth Edition of the Massachusetts Building Code (780 CMR).**

**Ground Improvement.** Chairman Erikson, asked each group to report on their discussions with industry professionals about proposed ground improvement language.

Scott DiFiore indicated that discussions with Geopier representatives went well with Kord agreeing that it is time to do something. Chairman Erikson indicated that Kord presented comments which were basically a repackaging of proposed requirements.



Damian Siebert indicated that conversations with Menard also went well and Sonia appreciated the chance to make comment on the proposal.

Martin Rodick suggested that conversations with Keller did not go as well as the others. Although Martin did not want to speak for Mike Oakland, he felt it was clear that Keller personnel did not think ground improvement requirements are necessary and would ultimately be confusing to engineers if enacted. Ken reluctantly offered comment that pared-down requirements considerably. Even with these edits, it appeared clear that Ken was not in favor of any requirements. Martin shared Keller's comments, but suggested that advancing the language does not achieve anything.

Following these presentations, committee members continued to review proposed requirements, incorporating changes suggested by Geopier, Menard and Keller comments where possible. Chairman Erikson provided revised version below.

#### **1809.14 Ground Improvement**

*Ground improvement*, for the purposes of this section, shall be defined as a system that uses *elements* of higher strength and stiffness material (aggregate, concrete, grout, or other mixture of cementitious materials and/or aggregates), to improve the physical behavior of the underlying ground upon which conventional building foundation units such as footings, slabs, or mats are supported.

This section is intended to provide requirements for the design and construction of ground improvement systems.

Ground improvement for foundation support shall be designed by a *registered design professional*. Ground Improvement design and construction shall include the following:

- a. Evaluation and definition of applied loads on the ground improvement system, including the following, as applicable:
  - i. Compression loads
  - ii. Tensile loads
  - iii. Lateral loads including static and dynamic loads
  - iv. Liquefaction
  - v. Downdrag
- b. Evaluation of the load distribution and strain compatibility between the individual ground improvement elements and the surrounding soil being modified for applied vertical and lateral loads
- c. Evaluation of the allowable geotechnical capacity (vertical and lateral) of individual ground improvement elements as applicable.
- d. Evaluation of lateral confinement for non- cementitious ground improvement elements.
- e. Evaluation of the allowable structural capacity (axial, flexure, and shear) of individual ground improvement elements as applicable and including evaluation of allowable stresses for ground improvement elements that are consistent with the materials listed in Table 1810.3.2.6
- f. Evaluation of compatibility with the structural foundation system including:
  - i. Evaluation of requirements for a granular transfer pad to separate the structure from the improved ground
  - ii. Evaluation of concentrated axial load resistance on supported structural elements including foundations and floor slabs as applicable
  - iii. Minimum number of elements to establish stability at isolated and strip footing locations
- g. Requirements for special inspections in accordance with the intent of Chapter 17.

- h. A load testing program on the ground improvement system, with acceptance criteria, that demonstrates adequate element and/or system performance appropriate for the ground improvement system.

In response to procedural question, Rob Anderson explained that members of the BBRS continue to review each chapter of the proposed tenth edition code during their monthly meetings. Rob identified that the Existing Building Committee began review of Chapter 34 of the code during the last meeting. At the close of the meeting, only about half of the chapter was discussed. Consequently, the Chapter 34 review will continue during the January 11, 2022 meeting. Based on this information, it was agreed that Chapter 18 would be presented to members of the BBRS by Chairman Erikson during the February 8<sup>th</sup> meeting, at which time the request to expand the GAC make-up would be addressed as well. Rob reminded committee members that the entire code needs to be offered for review via a public hearing so that all may comment on its proposed contents. Likely, that hearing will be scheduled towards the middle of 2022.

John Roma reminded members that he would still like to consider factor of safety reduction to 2.25 and Chairman Erikson asked members to reserve January 12<sup>th</sup> @ 10 a.m. for a follow-up meeting.

- 3. **Discuss:**        **Matters not reasonably anticipated 2 business days in advance of meeting.**

None.

- 4. **Approve:**        **Adjourning the meeting.**

On a **MOTION** by Chris Erikson seconded by Damian Siebert, **by Roll Call Vote**, it was unanimously agreed to adjourn the meeting @ approximately 11:45 am.

#### **Exhibits.**

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- A. Meeting Agenda
- B. December 1, 2021 GAC Draft Meeting Minutes.
- C. Proposed Ground Improvement Language.
- D. International Building Code (IBC), Chapter 18 January Draft (*modified as a **WORD** document for clarity*).