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Geotechnical Advisory Committee (GAC) Meeting Minutes

December 1, 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	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Martin Rodick	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent
Scott DiFiore	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Jake McManus	<input type="checkbox"/> present <input checked="" type="checkbox"/> absent
John Roma	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	James Christensen	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent
Michael Oakland	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	William Solberg	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent
Damian Siebert (arrived @ 10:45 am)	<input checked="" type="checkbox"/> present <input type="checkbox"/> absent	Rob Anderson	<input checked="" type="checkbox"/> present <input type="checkbox"/> 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.*

1. Review minutes for the GAC November 17, 2021 meeting (EXHIBIT B).

On a **MOTION** by Chris Erikson, seconded by Martin Rodick, it was unanimously agreed, by **Roll Call Vote**, to approve the minutes as submitted.

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, presented a revised version of proposed ground improvement requirements which read:

Ground improvement shall be defined as a system that uses inclusions of higher strength and stiffness material (aggregates, concrete, grout, or other mixture of cementitious materials and/or aggregates), to transform 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 Professional Engineer registered in the Commonwealth of Massachusetts. Ground Improvement shall include the following:

- a. Design and evaluation of the load distribution between the individual ground improvement elements and the surrounding soil being modified.
- b. Design and evaluation of the allowable geotechnical capacity (vertical and lateral) of individual ground improvement elements as applicable.
- c. Design and evaluation of the allowable structural capacity (axial, flexure, and shear) of individual ground improvement elements as applicable.
- d. Design and evaluation of the design seismic event on the ground improvement system
- e. Compatibility with the structural foundation system
- f. Load transfer pad
- g. Special inspections in accordance with the intent of Chapter 17
- h. Allowable stresses for ground improvement elements that are consistent with the materials listed in Table 1810.3.2.6
- i. Effect of and potential for downdrag on the ground improvement elements
- j. Restriction of ungrouted elements and additional requirements for systems installed through organic or soft soils
- k. Minimum number of elements to establish stability at isolated and strip footing locations. Individual footings not laterally supported shall have a minimum of three elements.
- l. Performance of a load testing program on each element type that demonstrates adequate element and/or system performance appropriate for the ground improvement system.

Scott DiFiore presented proposed revisions to the requirements as identified in Exhibit D. Scott also suggested identifying exclusions to ground improvement to make requirements clearer to the reader.

Chairman Erikson asked Scott to review each suggested change and encouraged committee member comment. On discussion, a small sampling of committee comments included:

- Chairman Erikson suggested that ground improvement definitions be specific to the section, not necessarily applicable to other portions of the code;
- John Roma suggested changing the word transform to improve in opening paragraph;
- James Christensen identifying that the purpose of the section is not to change the current state of the current code process, but to better define in order to establish a level playing field, and suggesting that there may be need for third party review requirements;
- Mike Oakland suggested that much of what is provided in the proposed ground improvement section is typically included in a geotechnical report and was concerned that the committee may be establishing duplicative requirements that may not be accepted by members of the Board of Building Regulations and Standards (BBRS);
- Damian Siebert cautioning that the intent of the section is to establish guardrails for ground improvements, not to write a design manual;
- Martin Rodick suggesting that once, established, the requirements would best fit under Section 1809.14 of the code.

Following lengthy discussion, Chairman Erikson established the following sub-groups of committee members who would meet with varied ground improvement and construction specialists to review proposed ground improvement requirements and report back findings during the December 15th meeting.

- Chairman Erikson and Scott DiFiore (*w/Geopier*);
- James Christensen and Damian Siebert (*w/Menard*);
- Mike Oakland and Martin Rodick (*w/Keller*);

3. **Discuss:** **Matters not reasonably anticipated 2 business days in advance of meeting.**
None.

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

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

Exhibits.

- A. Meeting Agenda
- B. November 17, 2021 GAC Draft Meeting Minutes.
- C. Proposed Ground Improvement Language (made part of these minutes as item 2).
- D. Scott DiFiore Proposed Revisions to Ground Improvement Section.
- E. International Building Code (IBC), Chapter 18 January Draft (*modified as a **WORD** document for clarity*).