

## Position Statement on Sealed Truss Placement Diagrams for Residential Projects in the Commonwealth of Massachusetts

Released September 24, 2007

### Issue:

Certain jurisdictions in Massachusetts are requesting engineering seals on Truss Placement Diagrams (TPD) (also known as a truss placement plan, truss layout, framing plan or framing layout). The following information should be used to provide insight into why component manufacturers should seriously consider all the ramifications of providing seals on TPD for residential projects.

This information is based on the *Rules and Regulations Governing Professional Engineers and Professional Land Surveyors* (250 CMR<sup>1</sup> 2.00 - 6.00), the *Licensing Provisions for Registration of Professional Engineers and Professional Land Surveyors* (M.G.L.<sup>2</sup> Chapter 112, Sections 61 to 65 and 81D to 81T)<sup>3</sup>, and the *Commonwealth of Massachusetts Building Code for One- and Two-Family Dwellings*<sup>4</sup>.

### Key Definitions:

#### **TRUSS DESIGN DRAWING (TDD):**

The graphic depiction of an individual truss, which describes the design and physical characteristics of the truss.

#### **TRUSS PLACEMENT DIAGRAM (TPD):**

The illustration supplied by the Truss Manufacturer identifying the location assumed for each Truss, which references each individually designated Truss Design Drawing. The Truss Placement Diagram shall be provided as part of the truss submittal package, and with the shipment of trusses delivered to the job site. Truss Placement Diagrams shall not be required to bear the seal or signature of the Truss Designer.

#### **CONSTRUCTION DOCUMENTS:**

Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit. Construction drawings shall be drawn to an appropriate scale.

#### **REGISTERED DESIGN PROFESSIONAL (RDP):**

An individual who is registered or licensed to practice his or her respective design profession as defined by the statutory requirements of the professional registration laws of the Commonwealth of Massachusetts.<sup>5</sup>

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<sup>1</sup> Code of Massachusetts Regulations (CMR)

<sup>2</sup> Massachusetts General Laws (MGL)

<sup>3</sup> [www.mass.gov/dpl/boards/en/](http://www.mass.gov/dpl/boards/en/)

<sup>4</sup> Massachusetts has adopted the 2003 IRC but it is currently not yet effective.

<sup>5</sup> From *The Commonwealth of Massachusetts Building Code for One- and Two-Family Dwellings - 7th Edition* Chapter 52



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### Unique Definitions for Structures that require a RDP:

#### **BUILDING DESIGNER:**

The owner of the building contracts with a Registered Design Professional for the design of the building structural system and who is responsible for the construction documents.<sup>6</sup>

#### **TRUSS DESIGN ENGINEER:**

The individual or organization responsible for the design of trusses. Each individual Truss Design Drawing shall bear the seal and signature of the Truss Design Engineer.<sup>7</sup>

### Unique Definitions for Structures that do not require a RDP:

#### **BUILDING DESIGNER:**

The owner of the building or the individual or organization that contracts with the owner for the design of the building structural system and/or who produces the construction documents.<sup>8</sup>

#### **TRUSS DESIGNER:**

The individual or organization responsible for the design of trusses.<sup>9</sup>

### Background:

The TPD is not to be viewed as an engineering document except as stated below; rather it is provided to assist the installer in properly locating the trusses within the structure. All the necessary truss engineering and analysis is found on the Truss Design Drawings (TDD).

If a TPD is provided, it is recommended that the project's Building Designer or RDP, if the local jurisdiction requires one for residential projects, review and approve the TPD to ensure that the intended load paths have not been altered.

If a Truss Design Engineer were to seal a TPD, it has been suggested that they could inappropriately be held responsible for ensuring the proper flow of loads through the truss to the bearing and support structure below the truss and into the foundation.

Truss Designer Engineers would only undertake Building Designer responsibilities under a special set of circumstances, including that they are professionally capable of taking on such responsibility and that they are properly compensated for the work.

### Analysis:

The majority of residential structures are built using the prescriptive code within the building codes. Trusses are simply replacements for the prescriptively applied joists and rafters, which are also highly engineered structural elements.

When the Building Designer involved with a residential project is an RDP, it is up to them to evaluate every structural component, (e.g., rafters, joists, I-joists, and trusses) to ensure their structural adequacy and that they are applied so that the structure's protection of life/safety is assured. The placement of trusses is just one of the elements the RDP must consider. Joists, rafters, I-joists, LVL, PSL, and glulam are other equally important structural elements that must be evaluated and integrated properly. The RDP will seal all his/her engineering work. Commonly the RDP delegates the design of the trusses to a Truss Design Engineer. The RDP will then review and approve all engineering performed by the Truss Design Engineer.

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<sup>6</sup> Adapted from IBC section 106.1.

<sup>7</sup> Adapted from IBC section 2303.4.

<sup>8</sup> Adapted from IBC 106.1

<sup>9</sup> Adapted from IBC 2303.4

## ***Residential Construction Documents***

According to the *Commonwealth of Massachusetts Building Code for One- and Two-Family Dwellings* Chapter 51 (see **Appendix A**):

**780 CMR 5110.7.3 Design.** Plans, computations and specifications involving new construction, alterations, repairs, expansions or additions or change in use or occupancy of any detached one or two-family dwelling which are required by the building official ...to be prepared by or under the supervision of a Massachusetts-registered architect or Massachusetts-registered professional engineer, as applicable, shall bear his or her original signature and seal.

The construction documents should in turn clearly define the scope of the work proposed by the Building Designer or RDP:

**780 CMR 5110.7 Construction Documents.** ...Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work will conform...

In preparing the construction documents, the RDP needs to provide the Truss Designer with the information necessary to properly design the trusses for the building. According to TPI 1 (*see Appendix B*), which is adopted by reference in the *Commonwealth of Massachusetts Building Code for One- and Two-Family Dwellings* [*see Appendix A* (5101.6), (5502.11.1), (5802.10.2), and (Part X — Referenced Standards)], the following information should be provided:

### **ANSI/TPI 1-2002 Chapter 2**

**2.5.2** The Building Designer...shall provide the following:

- 2.5.2.1** All Structural Element and Truss orientations and locations;
  - 2.5.2.2** Information to fully determine all Truss profiles;
  - 2.5.2.3** All Structural Element and Truss bearing conditions;
  - 2.5.2.4** The location, direction, and magnitude of all dead and live loads applicable to each Structural Element and Truss...
  - 2.5.2.5** All Structural Element and Truss anchorage designs required to resist uplift, gravity, and lateral loads;
  - 2.5.2.6** Allowable vertical and horizontal deflection criteria and any specific criteria...
  - 2.5.2.7** Proper transfer of design loads affecting the Structural Elements and Trusses;
  - 2.5.2.8** Adequate connections between Trusses and between Structural Elements...but not Truss to Truss girder connections...
  - 2.5.2.9** Permanent bracing design for the Building...and permanent bracing for all Structural Elements and Trusses...
- 2.5.3** The Building Designer shall be responsible for the adequacy of the design of the Building Structural System [and]...shall evaluate the effect of the Trusses and the Structural Elements supplied, on the Building Structural System.

## ***Truss Design and Preparation of Truss Design Drawings***

Assuming the requisite information is provided within the construction documents issued by the RDP or Building Designer, the Truss Designer's sole responsibility is to properly design the individual trusses according to this information. Once designed, a truss is then depicted on a TDD. The Truss Designer is therefore specifically responsible for the single truss design depicted on each TDD.

## ***Who Typically Prepares Truss Placement Diagrams?***

Assuming the requisite information is provided in the Construction Documents, TPD are prepared by component manufacturer personnel who are not typically Truss Design Engineers and many times are the Truss Manufacturer's salespeople or are individuals who work as truss technicians or truss take-off specialists (Truss Designers). All these people are highly trained and skilled in the work they do but are generally non-engineers. Because these TPD are typically prepared outside the Truss Designer Engineer's scope of work, they may not be reviewed or even seen by the Truss Design Engineer and are therefore not prepared under the Truss Design Engineer's direct supervision.

### ***To Require Truss Placement Diagrams to be Sealed Would Violate Massachusetts Law.***

Because TPD are generally neither created by nor created under the immediate personal supervision of a licensed design professional, they cannot be sealed. Requesting a Truss Design Engineer to seal a non-registered person's work is illegal in Massachusetts per Section 3.05 of the *Rules and Regulations Governing Professional Engineers and Professional Land Surveyors* (see **Appendix C**) and expanded in the *Advisory Ruling Pursuant To 250 CMR 2.09: Direct Charge and Supervision* (see **Appendix E**), which state in pertinent part:

**250 CMR 3.05: Professional Practice.** (3) The seal is to be used...only on drawings and/or documents produced by the registrant personally or under the registrant's direct personal supervision. ...

According to the *General Laws of Massachusetts* Chapter 112 Section 81P (see **Appendix D**), the sealing of work not performed or directly supervised by the professional engineer is cause for revoke of registration.

**Chapter 112: Section 81P.** ...The board may revoke the certificate of registration of any registrant who is found guilty of: ...**(c)** The affixing of his signature to plans, drawings, specifications or other instruments of service which have not been prepared...under his immediate and responsible direction,

### ***Why are Truss Placement Diagrams Prepared?***

TPDs are intended to assist customers, erectors and code enforcement officials in positioning or locating the trusses and related structural components supplied by the component manufacturer.

Their function is to serve as detailed installation instructions. They indicate the component manufacturer's assumed location for each truss or related component that has been designed and manufactured.

From this perspective, a truss or related structural building component is no different than a window that is manufactured and in turn installed within a building. A window may be a highly engineered component of a house with specific installation specifications and instructions. However, there is no requirement to provide an engineer's seal on the installation instructions for windows.

### ***The International Code Committee (ICC) Has Recently Codified That Truss Placement Diagrams Should Not Be Sealed***

The 2000 and 2003 editions of the International Codes did not clearly define a TPD. As such, some incorrectly inferred that they were part of the "Truss Design Drawings" which are defined as follows [R502.11.4 and R802.10.1]:

**R502.11.4 Truss design drawings.** Truss design drawings, prepared in compliance with Section R502.11.1, shall be provided to the building official and approved prior to installation. ...

**R802.10.1 Truss design drawings.** Truss design drawings, prepared in conformance with Section R802.10.1, shall be provided to the building official and approved prior to installation. ...

To clear up any confusion on this issue, Section 2303 of the 2006 International Building Code (IBC), which is the nationally recognized model building code newer editions of the *Commonwealth of Massachusetts State Building Code* will be based upon, has been revised to include the following regarding "Truss Placement Diagram":

**2006 IBC 2303.4.3 Truss Placement Diagram.** A diagram supplied by the truss manufacturer that identifies the proposed location for each individually designated truss and references the corresponding Truss Design Drawing. The Truss Placement Diagram shall be provided as part of the Truss Submittal Package, and with the shipment of trusses delivered to the job site. Truss Placement Diagrams shall not be required to bear the seal or signature of the Truss Designer.

**Exception:** When the Truss Placement Diagram is prepared under the direct supervision of a registered design professional, it is required to be signed and sealed.

This change will provide much greater clarity and better communication and appears in the 2006 Edition of the International Building Code. Identical language has been proposed and will be included in subsequent versions of the International Residential Code.

### Conclusion

The Massachusetts professional engineering law and the *Commonwealth of Massachusetts Building Code for One- and Two-Family Dwellings* provide the basis upon which to evaluate the need to provide an engineer's seal on a Truss Placement Diagram (TPD). Based on the building code regulations and professional engineering law, unless prepared under the direct supervision of a Registered Design Professional, TPDs do not require a professional engineer's seal.

## Appendix A

The language in RED signifies sections of the code or law that have been used in the foregoing document to make it easier for the reader to see the language in context.

### 780 CMR: STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

The Commonwealth of Massachusetts Building Code for One- and Two-Family Dwellings - 7<sup>th</sup> Edition

### 780 CMR 51.00 ADMINISTRATION FOR SINGLE- AND TWO-FAMILY DWELLINGS

#### 780 CMR 5101 SCOPE

5101.1 Title. 780 CMR 51.00 through 99.00 (plus Referenced Standards, Regulations, Appendices and Index) shall be known as the *Commonwealth of Massachusetts Building Code for One- and Two-Family Dwellings*.

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5101.6 Referenced Standards. The standards referenced in 780 CMR 51.00 through 99.00 and listed in Appendix A shall be considered part of the requirements of 780 CMR 51.00 through 99.00 to the prescribed extent of each such reference. Where differences occur between provisions of 780 CMR 51.00 through 99.00 and referenced standards, the provisions of 780 CMR 51.00 through 99.00 shall apply. The administrative provisions of 780 CMR 51.00 through 99.00 shall apply to all standards referenced in *Appendix A*, other than the specialized codes listed in 780 CMR 5101.5.

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#### 780 CMR 5110 APPLICATION FOR PERMIT

5110.7 **Construction Documents.** The application for a permit shall be accompanied by not less than three sets of construction documents. The building official is permitted to waive or modify the requirements for filing construction documents when the building official determines that the scope of the work is of a minor nature. When the quality of the materials is essential for conformity to 780 CMR 51.00 through 99.00, specific information shall be given to establish such quality, and 780 CMR 51.00 through 99.00 shall not be cited, or the term "legal" or its equivalent used as a substitute for specific information.

When such application for permit includes fire protection systems or portions thereof, the building official shall cause one set of construction documents filed pursuant to 780 CMR 5110.7 to be transmitted simultaneously to the head of the local fire department for his file, review and approval of the fire protection system items specified in 780 CMR 5313 and/or 780 CMR 93.00 as applicable. The head of the local fire department shall within ten working days from the date of receipt by him, approve or disapprove such construction documents. If the head of the local fire department disapproves such construction documents, he or she shall notify the building official (refer to M.G.L. c. 148, § 28A) in writing citing the relevant sections of noncompliance with 780 CMR or the sections of the referenced standards of *Appendix A*. Upon the request of the head of the local fire department, the building official may grant one or more extensions of time for such review provided, however, that the total review by said head of the local fire department shall not exceed 30 calendar days (the same concurrent 30-day period afforded building department review). If such approval, disapproval or request for extension of time is not received by the building official within said ten working days, the building official may deem the fire protection construction documents implicitly approved by the head of the local fire department.

Construction documents shall be drawn upon suitable material. Electronic media documents are permitted to be submitted when approved by the building official. Construction documents shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work will conform to the provisions of 780 CMR 51.00 through 99.00 and relevant laws, ordinances, rules and regulations, as determined by the building official.

At a minimum, construction documents shall include the following:

1. Site plan;

2. Foundation plan and details (as necessary);
3. Floor plans (including basement and attic levels, if applicable); floor plans shall include location of all required fire protection systems and heating systems storage areas.
4. Exterior building elevations;
5. Framing plans and/or building section(s) adequately depicting structural systems;
6. Schedules, legends and/or details adequately depicting doors, windows and related material installations; and
7. Energy conservation information.

Failure to comply with 780 CMR 5110.7 Items through .7 shall result in denial of the building permit.

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**5110.7.3 Design.** Plans, computations and specifications involving new construction, alterations, repairs, expansions or additions or change in use or occupancy of any detached one or two-family dwelling which are required by the building official under 780 CMR 5110 to be prepared by or under the supervision of a Massachusetts-registered architect or Massachusetts-registered professional engineer, as applicable, shall bear his or her original signature and seal. Said signature and seal shall signify that the plans, computations and specifications meet the applicable provisions of 780 CMR 51.00 through 99.00 and all accepted engineering practices. A legally recognized professional performing work as defined by M.G.L. c. 112, § 81R may be exempted from 780 CMR 5110.

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## 780 CMR 55.00: FLOORS

### 780 CMR 5502 WOOD FLOOR FRAMING

#### 5502.11 Wood Trusses.

**5502.11.1 Design.** Wood trusses shall be designed in accordance with approved engineering practice. The design and manufacture of metal-plate-connected wood trusses shall comply with ANS/TPI 1. The truss design drawings shall be prepared by a Massachusetts-registered architect or registered professional engineer.

**5502.11.2 Bracing.** Trusses shall be braced to prevent rotation and provide lateral stability in accordance with the requirements specified in the construction documents for the building and on the individual truss design drawings. In the absence of specific bracing requirements, trusses shall be braced in accordance with the Building Component Safety Information (BCSI 1-03) *Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses*.

**5502.11.3 Alterations to Trusses.** Truss members and components shall not be cut, notched, spliced or otherwise altered in any way without the approval of a registered design professional. Alterations resulting in the addition of load (e.g., HVAC equipment, water heater, etc.), that exceed the design load for the truss, shall not be permitted without verification that the truss is capable of supporting the additional loading.

**5502.11.4 Truss Design Drawings.** Truss design drawings, prepared in compliance with 780 CMR 5502.11.1, shall be provided to the building official and approved prior to installation. Truss design drawing shall be provided with the shipment of trusses delivered to the job site. Truss design drawings shall include, at a minimum, the information specified in 780 CMR 5502.11.4.1 through .12:

1. Slope or depth, span, and spacing.
2. Location of all joints.
3. Required bearing widths.
4. Design loads as applicable.
  - 4.1. Top chord live load (including snow loads).
  - 4.2. Top chord dead load.
  - 4.3. Bottom chord live load.
  - 4.4. Bottom chord dead load.
  - 4.5. Concentrated loads and their points of application.

- 4.6. Controlling wind loads.
  5. Adjustments to lumber and joint connector design values for conditions of use.
  6. Each reaction force and direction.
  7. Joint connector type and description (e.g., size, thickness or gauge); and the dimensioned location of each joint connector except where symmetrically located relative to the joint interface.
  8. Lumber size, species and grade for each member.
  9. Connection requirements for:
    - 9.1. Truss-to-truss girder.
    - 9.2. Truss ply-to-ply.
    - 9.3. Field splices.
  10. Calculated deflection ratio and/or maximum deflection for live and total load.
  11. Maximum axial compression forces in the truss members to enable the building designer to design the size, connections and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss drawing or on supplemental documents.
  12. Required permanent truss member bracing location.
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**780 CMR 58.00: ROOF-CEILING CONSTRUCTION**  
**780 CMR 5802 WOOD ROOF FRAMING**

**5802.10 Wood Trusses.**

**5802.10.1 Truss Design Drawings.** Truss design drawings, prepared in conformance with 780 CMR 5802.10.1, shall be provided to the building official and approved prior to installation. Truss design drawings shall include, at a minimum, the information specified below. Truss design drawing shall be provided with the shipment of trusses delivered to the jobsite.

1. Slope or depth, span and spacing.
2. Location of all joints.
3. Required bearing widths.
4. Design loads as applicable.
  - 4.1. Top chord live load (including snow loads).
  - 4.2. Top chord dead load.
  - 4.3. Bottom chord live load.
  - 4.4. Bottom chord dead load.
  - 4.5. Concentrated loads and their points of application.
  - 4.6. Controlling wind loads.
5. Adjustments to lumber and joint connector design values for conditions of use.
6. Each reaction force and direction.
7. Joint connector type and description (e.g., size, thickness or gauge) and the dimensioned location of each joint connector except where symmetrically located relative to the joint interface.
8. Lumber size, species and grade for each member.
9. Connection requirements for:
  - 9.1. Truss to truss girder.
  - 9.2. Truss ply to ply.
  - 9.3. Field splices.
10. Calculated deflection ratio and/or maximum description for live and total load.
11. Maximum axial compression forces in the truss members to enable the building designer to design the size, connections and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss design drawing or on supplemental documents.
12. Required permanent truss member bracing location.

**5802.10.2 Design.** Wood trusses shall be designed in accordance with accepted engineering practice. The design and manufacture of metal plate connected wood trusses shall comply with ANSI/TPI 1. The truss design drawings shall be prepared by a Massachusetts-registered architect or registered professional engineer.

**5802.10.3 Bracing.** Trusses shall be braced to prevent rotation and provide lateral stability in accordance with the requirements specified in the construction documents for the building and on the individual truss design drawings. In the absence of specific bracing requirements, trusses shall be braced in accordance with Building Component Safety Information (BCSI 1-03) *Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses*.

**5802.10.4 Alterations to trusses.** Truss members shall not be cut, notched, drilled, spliced or otherwise altered in any way without the approval of a registered design professional. Alterations resulting in the addition of load (e.g., HVAC equipment, water heater) that exceeds the design load for the truss shall not be permitted without verification that the truss is capable of supporting such additional loading.

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**Part X — Referenced Standards**

**780 CMR 100.00**

**REFERENCED STANDARDS**

**TPI**

Truss Plate Institute Inc.

Suite 200

583 D'Onofrio Drive

Madison, Wisconsin 53719

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Standard reference number	Title	Referenced in Code Section number
TPI 1-2002	National Design Standard for Metal-plate-connected Wood Truss Construction	5502.11.1, 5502.11.2, 5802.10.2, 5802.10.3, 5802.11.1

## Appendix B

ANSI/TPI 1-2002

National Design Standard for Metal Plate Connected Wood Truss Construction

Chapter 2 – Standard Responsibilities in the Design Process Involving Metal Plate Connected Wood Trusses

### 2.5 BUILDING STRUCTURAL SYSTEM DESIGN DOCUMENTS

- 2.5.1 The Building Designer, through the Structural Design Documents shall provide that the Structural Elements and Trusses shall not be subjected to adverse influences including, but not limited to moisture, temperature, and corrosive chemicals and gases. This provision shall specifically include notice for the Truss Designer of environments expected to result in wood moisture content exceeding 19 percent, and temperatures and/or corrosion potential that are unusually high relative to typical wood buildings.
- 2.5.2 **The Building Designer**, through the Structural Design Documents shall provide information sufficiently accurate and reliable to be used for facilitating the supply of the Structural Elements and for developing the design of the Trusses for the Building, and **shall provide the following:**
- 2.5.2.1 **All Structural Element and Truss orientations and locations;**
- 2.5.2.2 **Information to fully determine all Truss profiles;**
- 2.5.2.3 **All Structural Element and Truss bearing conditions;**
- 2.5.2.4 **The location, direction, and magnitude of all dead and live loads applicable to each Structural Element and Truss** including, but not limited to, loads attributable to: roof, floor, partition including any directions other than given in ANSI/TPI 1-2002, mechanical, fire sprinkler, attic, storage, rain loads and ponding, design wind speed and exposure category, snow, snow drift, unbalanced snow load, and seismic forces;
- 2.5.2.5 **All Structural Element and Truss anchorage designs required to resist uplift, gravity, and lateral loads;**
- 2.5.2.6 **Allowable vertical and horizontal deflection criteria and any specific criteria** per ANSI/TPI 1-2002;
- 2.5.2.7 **Proper transfer of design loads affecting the Structural Elements and Trusses;**
- 2.5.2.8 **Adequate connections between Trusses and between Structural Elements**, including Truss to Structural Element connections, **but not Truss to Truss girder connections** except such connections that are excluded from the scope of the Truss Designer's responsibilities.
- 2.5.2.9 **Permanent bracing design for the Building**, including bracing to resist wind, seismic, or other lateral forces, **and permanent bracing for all Structural Elements and Trusses**. The permanent bracing design shall incorporate the continuous lateral chord and web member bracing that is designated on the individual Truss Design Drawings into the overall bracing for the entire Building Structural System.
- 2.5.3 **The Building Designer shall be responsible for the adequacy of the design of the Building Structural System** or the adequacy of the Structural Design Documents. **The Building Designer shall evaluate the effect of the Trusses and the Structural Elements supplied, on the Building Structural System.**

## Appendix C

### Code of Massachusetts Regulations (CMR) Rules and Regulations Governing Professional Engineers and Professional Land Surveyors 250 CMR 3.00: Application and Examination 3.05: Professional Practice

- (1) Sample imprints of approved seals are available at the Board office. The outside diameter of the professional engineer and land surveyor imprint should be approximately one and five-sixteenths inches or thirty-three millimeters. Either a rubber stamp or an embossing press is approved.
- (2) The engineering discipline in which the registrant is registered shall be either included as part of the seal or it may be handwritten above the registrant's signature.
- (3) **The seal is to be used** only by the registrant personally, and **only on drawings and/or documents produced by the registrant personally or under the registrant's direct personal supervision.** Each time the seal is used, the registrant shall (if not included on the seal) indicate the discipline in which registered, the date and affix the registrant's signature in a legible manner. The registrant shall add any suitable comments if not taking entire responsibility for all of the work on the drawing and/or documents. A new stamping is required to indicate there has been a change or a series of changes made on the drawing. Such comment might limit responsibility to electrical design, structural design, property boundaries, a specified portion of the document, or a specified change.
- (4) The registrant must not permit the seal to pass out of said registrant's personal possession and total control. The seal shall not be used by a registrant whose registration has lapsed. The use of printed copies of the seal on stickers, decals, cards, stationery, advertising, or any other material is forbidden.
- (5) The Board file shows the branch of engineering in which the registrant was found to be competent by the Board on the basis of education, experience, and specific examination passed by said registrant.
- (6) The Board initially registers an applicant for Professional Engineer in one branch of engineering only. A registrant who wishes to change registration to a different branch or to be registered in an additional branch of engineering shall file a new application form including the proper experience record and educational basis for said application. There will be the standard fee for each registration application and for any examinations required. A registrant who wishes to practice engineering in an area of competence other than that in which registered may request a determination of competence by submitting such evidence as may be required by the Board.
- (7) A registrant must limit professional practice to areas of personal competence as demonstrated to and approved by the Board. (The registrant may, however, work in other areas provided it is under the guidance of a Registered Professional Engineer or Land Surveyor qualified in said other areas, or under the guidance of a competent Engineer or Land Surveyor practicing under one of the exceptions listed in M.G.L. c. 112, § 81R as noted in 250 CMR 3.05(8).) A registrant shall not take responsibility for work in areas in which said registrant is not competent even though the area comes within a branch in which said registrant is registered. The burden of proof of competence rests upon the registrant should a question be raised as to that competence. The Board shall make the determination of competence when requested by the registrant or any person or entity.
- (8) Engineering work may be performed only by registered Professional Engineers and land surveying work may be performed only by registered Land Surveyors with certain exceptions listed under M.G.L. c. 112, § 81R. These rights granted by specific exception do not include the right to use the title "engineer" or "land surveyor".

(9) Engineering work may be performed only by or under the direct supervision of a registered Professional Engineer qualified by the laws of the Commonwealth of Massachusetts to so practice.

(10) Land surveying work may be performed only by or under the direct supervision of a registered Land Surveyor qualified by the laws of the Commonwealth of Massachusetts to so practice except that a Professional Engineer registered as a Civil Engineer may perform land surveying incidental to engineering work excluding property line determination. Any plan which requires the location of a structure in relation to a real property boundary involves property line determination and must be performed by a Land Surveyor.

(11) Direct charge of the practice of engineering or land surveying work is construed to be direct supervision of the activities performed by others. Direct supervision includes, but is not limited to coordination, review and approval of the technical and professional level tasks performed on a project for which the registrant is responsible. Registered persons in direct charge of the practice of engineering or surveying work, as defined in the laws and regulations, shall be able to provide acceptable written documentation that supervision was performed by the registrant with hands-on access to project data and documents throughout the duration of the project.

(12) Land surveying is considered to be work of a professional nature and shall be performed in conformance with minimum standards as embodied in 250 CMR 6.00.

## Appendix D

GENERAL LAWS OF MASSACHUSETTS  
PART I: ADMINISTRATION OF THE GOVERNMENT  
TITLE XVI: PUBLIC HEALTH  
CHAPTER 112: REGISTRATION OF CERTAIN PROFESSIONS AND OCCUPATIONS  
REGISTRATION OF PROFESSIONAL ENGINEERS AND OF LAND SURVEYORS

### Chapter 112: Section 81P. Reprimand and suspension of registration; revocation; charges; hearing

**Section 81P.** The board shall have the authority to reprimand a registrant and to suspend the registration of a registrant for a limited period to be specified in such suspension order for any fraud, deceit, gross negligence, incompetence, misconduct or any crime involving moral turpitude in the practice of engineering or land surveying.

**The board may revoke the certificate of registration of any registrant who is found guilty of:**

(a) The practice of any fraud or deceit in obtaining a certificate of registration; or

(b) Any gross negligence, incompetency or misconduct in the practice of professional engineering or land surveying as a registered professional engineer or as a registered professional land surveyor; or

(c) **The affixing of his signature to plans, drawings, specifications or other instruments of service which have not been prepared** by him or in his office, or **under his immediate and responsible direction**, or permitting his name to be used for the purpose of assisting any person, not a registered professional engineer or registered professional land surveyor, to evade the provisions of this chapter.

Any person may prefer charges of fraud, deceit, gross negligence, incompetency or misconduct against any registrant. Such charges shall be in writing, shall be sworn to by the person making them and shall be filed with the secretary of the board.

The board, under the hand of its chairman and the seal of the board, may subpoena witnesses and compel their attendance, and may require the production of books, papers and documents in any case involving the revocation of registration. Any member of the board may administer oaths or affirmations to witnesses appearing before the board. If any person refuses to obey any subpoena so issued, or refuses to testify or produce such books, papers and documents, the board may present a petition to the superior court, setting forth the facts, and thereupon the superior court shall, after a hearing and in its discretion, order such person to appear before said board and to testify or to produce such books, papers and documents as may be deemed necessary and pertinent. Any person failing or refusing to obey the order of said court may be proceeded against in the same manner as for refusal to obey any other order of said court.

All charges, unless dismissed by the board as unfounded or trivial, shall be heard by the board within three months after the date on which they shall have been preferred. The time and place for said hearing shall be fixed by the board, and a copy of the charges, together with a notice of the time and place of hearing, shall be personally served on, or mailed to the last known address of, such registrant at least thirty days before the date fixed for the hearing. At any hearing the accused registrant shall have the right to appear personally and by counsel, to cross-examine witnesses appearing against him, and to produce evidence and witnesses in his own defense. If, after such hearing, three or more members of the board vote in favor of finding the accused guilty, the board shall revoke the certificate of registration of such registered professional engineer or registered professional land surveyor.

## Appendix E

### Advisory Ruling Pursuant To 250 CMR 2.09: Direct Charge and Supervision

By the Division of Professional Licensure <sup>10</sup>

Chapter 112, Section 81P of the Massachusetts General Laws defines those circumstances when the Board may sanction (up to and including revocations of license) a registrant for certain types of activities. It is this section of the law that provides the greatest insight into the proper role of the registrant relative to the preparation of instruments of service. This section of the law reads in part:

"The Board may revoke the certificate of registration of any registrant who is found guilty of... (c) The affixing of his signature to plans, drawings, specifications or other instruments of service which have not been prepared by him or in his office, or under his immediate and responsible direction, or permitting his name to be used for the purpose of assisting any person, not a registered professional engineer or registered professional land surveyor, to evade the provisions of this chapter."

Pursuant to MGL c.30A, §2 & 3, the Board adopted certain regulations associated with the Registration Law, Chapter 112, Section 81D – 81T. The regulation that deals with Supervision and Responsibility for Practice is 250 CMR 5.02, which reads:

"The practice of engineering or of land surveying by a person, firm, co-partnership, corporation or joint stock association construed to practice or to offer to practice engineering or land surveying shall be under the direct charge and supervision of a person, or persons, holding a valid certificate of registration under the statute and that person, or persons, shall be responsible for the performance of such work in a competent manner to avoid gross negligence or misconduct that could endanger the life, health and safety of the public."

It is the opinion of the Board, the term "immediate and responsible direction" and "under the direct charge and supervision" found in the aforementioned law and regulation are synonymous statements imposing a duty that must be met by the registrant whenever affixing his or her stamp or signature to any instruments of service prepared by another person.

In concurrence with Section 81P, supra, the Board has opined that a registrant may not sign or seal any instrument of service that was not "produced by the registrant personally or under the registrant's direct personal supervision" as set forth in paragraph (3) of 250 CMR 3.05, Professional Practice.

In concurrence with Section 81P, supra, the Board has opined that a registrant must "be able to provide acceptable written documentation that supervision was performed by the registrant with hands-on access to project data and documents throughout the duration of the project" as set forth in paragraph (11) of 250 CMR 3.05 Professional Practice.

Chapter 112 and 250 CMR make other such references to the concept of Direct Charge and Supervision, some are quite obvious and others are much more obscure. From these various references it is clear that the relationship between the registrant and those persons assisting in the preparation of instruments of service is an essential element of professional practice and protecting the public interest.

The Board has found that the concept of Direct Charge and Supervision that best conforms to the intent of the registration law and that best protects the public interest is characterized by the following criteria:

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<sup>10</sup> The Division of Professional Licensure is an agency within the Office of Consumer Affairs and Business Regulation with 29 boards of registration regulating more than 40 trades and professions. They are responsible for licensing and regulating the activities of over 330,000 individuals, corporations and partnerships. The Division of Professional Licensure's mission is to protect the public health, safety and welfare by licensing qualified individuals who provide services to consumers and by fair and consistent enforcement of the statutes and regulations of the boards of registration.

That the registrant exercised unambiguous decision-making authority with respect to the preparation of the instruments of service he or she is stamping and signing, without interference or undue influence from any other individual or entity.

That those unlicensed persons assisting in the preparation of the instruments of service were subordinates directly to the registrant (or another registrant in his/her direct charge) and not indirectly through some other person or entity that was capable of subverting the registrant's wishes, i.e. that the registrant could reasonably have compelled the assisting person to carry out his or her charge with regard to those activities and practices regulated by the registration law, rules and regulations.

That the registrant (or another registrant in his/her direct charge) had the freedom and authority to assign persons of his/her choosing to assist in the preparation of instruments of service.

That the registrant exercised due care in assigning tasks to persons assisting in the preparation of instruments of service based upon the registrant's knowledge of each person's expertise, knowledge and skill levels.

That the registrant has a verifiable record that products produced by those assisting him/her were subject to regular and continuing review and supervision throughout the development process, from the time of contract to the time of delivery.

That those assisting the registrant in the preparation of instruments of service had continuous access to and guidance from the registrant throughout the development process.

This Advisory Ruling is issued pursuant to a determination made by a majority of members present at the duly called meeting of the Board of Registration of Professional Engineers and Professional Land Surveyors on November 16, 2000.



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