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Publisher's Message

Solidarity & Sealed Placement Plans by Kirk Grundahl

To use an old cliché, two heads are better than one, meaning that gaining the benefit of counsel from a variety of people with experience and wisdom will generally provide the best possible result. This is really the goal behind the implementation of the chapter process within WTCA—it is meant to facilitate an ongoing and solid exchange of information so that we truly undertake work that is meaningful and valuable. Another benefit is the teamwork opportunities that are created where the work of the group is always better than what could be done by any one individual. Currently, there are three great examples of this type of teamwork, in California, North Carolina and Florida, where chapter members are dealing with difficult building code and professional engineering issues to produce a positive end result for our industry.

CALIFORNIA

Riverside County in southern California, one of the largest counties and largest construction markets in the U.S., wanted to find a way to ensure that the trusses supplied to the job were the same as the trusses originally designed for the job. Its first reaction to solving this issue was to require a sealed truss placement diagram. With support of staff, the WTCA Chapter in California—CALESCA—immediately went into action and pulled together a meeting with Kack Sung, P.E., Chief Building Official for Riverside. I attended the meeting with Ken Cloyd of California Truss Co. (then CALESCA President), Gary Sartor of Stone Truss (incoming CALESCA Secretary), Bill Turnbull and Scott Carroll of CompuTrus, and Sung and five of his staff engineers that were undertaking day-to-day plan review and inspections. The goal of the meeting was to find common ground for both the processing of truss design drawings and truss placement diagrams through the entire construction process and for the use of electronic seals and signatures.

While this work is still in progress, the relationship that our group has created here is best summarized by a February 14 correspondence from Sung: “I received your draft regarding the above mentioned issues. You really did a lot of research about it. I am trying to schedule a meeting among our district engineers, but due to a mitigation fee deadline, we have been inundated with work. One of our new district engineers is expected to come on board on the first week of March, so I am planning to have a meeting among us around that time. I know that we are on the same page, I am sure that we can come up with a good resolution soon.”

NORTH CAROLINA

In North Carolina, the circumstances were less ideal than the situation in Riverside County. Our

industry was reacting to a pronouncement by the North Carolina Department of Insurance (DOI) that truss placement plans were included in the 2002 adoption of the North Carolina Building Code definition of truss design drawings, and hence the code required the drawings to be signed and sealed by a registered design professional. This led to a series of meetings with the North Carolina Board of Examiners for Engineers and Land Surveyors (NCBELS) and DOI to see if we could find common ground. The key team working on this issue consisted of Tom Hollinshed of Comtech, Jack Parker of Eastern Building Components and myself, with the support of TPI TAC Chair Dave Brakeman, P.E. of Alpine Engineered Products, TPI TAC member Steve Cabler, P.E. of MiTek, Scott Coffman, P.E. of Builders FirstSource, Joe Kannapell, P.E. of MiTek, and WTCA Counsel Kent Pagel, as well as the excellent support and perspective of the general membership of the North Carolina Chapter.

This process has taken a variety of twists and turns along the way, but can be best summarized as follows:

- After adoption of the new code, DOI began educating their local building officials indicating that the new code required that a truss placement plan be signed and sealed by a registered design professional.
- Once this happened, all the actions of our industry fell under the purview of the NC Professional Engineering law. The NCBELS got involved in this process when we brought this to their attention and asked for their perspective. If DOI had not taken the position they did, NCBELS would not have been involved, as there would be nothing sealed and they would have no jurisdiction over the issue.
- At a meeting between DOI, NCBELS and our team, we thoroughly discussed all the issues surrounding the truss design drawing and truss placement plan process that is used by our industry. Unfortunately, we were not persuasive in changing the placement plan requirement. NCBELS added to this requirement that if the truss design engineer was the only engineer on the job, at such time such engineer sealed a placement plan, he or she became responsible for the life safety of those applied loads to the structure below. Clearly, this extended the truss designer's scope of responsibility well beyond what is normal and expected by our industry.
- DOI came back and stated that the truss industry engineering responsibility should not go beyond the plate line and asked NCBELS if they would accept a scope of responsibility statement on the truss placement plan. NCBELS said that they would, as long as another engineer looked at the critical loads and transferred them down to the foundation.
- This presented our charge: to come up with an acceptable scope of responsibility statement that would be set forth on placement plans for DOI and then get this approved by NCBELS.
- This scope of responsibility statement work was undertaken by our team and TPI TAC, to provide to DOI for acceptance as follows:
  - The magnitude of the reaction load chosen needed to conform to the current NC Building Code and DOI would select the acceptable load from the options our industry offered. The initial load DOI selected was the most conservative load case presented by us and the DOI accepted statement follows.
  - This placement plan shows the designation and relative location of each truss component and is to be used in conjunction with the corresponding truss designs. The Truss Design Engineer's responsibility relative to this structure consists solely of the design of the individual trusses and does not include the design of any supporting structural elements. Should any truss reactions exceed 2860 lbs, a structural engineer is then required to design

the transfer of such reactions to the foundation. Reactions exceeding 2860 lbs are highlighted on truss design drawings.

- DOI agreed to consider alternate reaction loads. A strong case can be made, based on the NC Residential Code, that this number should be 3740 lbs instead of 2860 lbs.
- Additionally there are places in the NC Residential Code that allow beams and headers to apply a reaction load far in excess of the 2860 lb requirement selected by DOI. An extreme example is the 28,587 lb (9529 plf times [6-foot span divided by 2]) reaction that is applied to framing below without structural engineering review (under table N-2 of the NC Residential Code). There are in fact many reaction loads in the building code tables that are in excess of the 2860 lb reaction load requirement selected by DOI.
- Our recommendation to DOI has also been that the inequities in requirements between structural materials be expeditiously addressed.

As I write this column, our team is working with DOI to define an approach that will allow our industry in North Carolina NOT to have to seal a truss placement plan when using specific details that are already accepted and adopted in the code. Our goal is to have the details accommodate reaction loads in excess of 10,000 lbs, similar to what is already allowed for conventional construction without an engineer's involvement.

So far, we have had a wonderful team effort working on resolving a very difficult issue. It is also clear that this work, if we stay on the current course, will result in a very strong positive relationship with DOI and NCBELS that will certainly serve us very well into the future.

FLORIDA

The Florida issue is perhaps the most difficult issue we have been working on in the engineering arena. Our industry's original goal was to implement a sealed cover or index sheet alternative to aid in speeding up the engineering process and allowing more time to be spent by engineers with respect to critical engineering issues. Unfortunately, as this process unfolded, as language to be used in the proposed rule was discussed and as meetings with the Florida Board of Professional Engineers (FBPE) were held, it became clear that there was a significant disconnect between what the FBPE desired and what our industry could accept in terms of responsibility. Similar to the NCBELS situation in North Carolina, the FBPE opined that if the truss design engineer was the only engineer on the job, then the truss design engineer was responsible for the life safety of those applied loads to the structure below. Again, this extended the truss design engineer's scope of responsibility well beyond what is normal or reasonable.

The Florida Chapter Executive Committee did its level best to extend an olive branch to FBPE to work through these issues together. Unfortunately, the FBPE Board and their attorney were strident in their opinion and position and did publish a new rule that extended our industry's scope of responsibility significantly, as it pertains to truss placement plans.

The only option we were left with was to work with the Florida Home Builders Association (FHBA) and challenge the rule-making process through litigation. We did this and again extended the FBPE an olive branch to work together to find a solution that was acceptable to both FBPE and our team, which in this case included FHBA, WTCA's Florida Chapter Executive Committee representing our chapter's interests and TPI. Fortunately, this legal challenge changed the

posture and attitude of FBPE and we were in a position to move toward a settlement or positive resolution without litigation—a win all around.

This resulted in a change to the law, which now aligns with exactly how our industry is transacting business and also meets the needs of FBPE for the case when an engineer undertakes truss system engineering. (See below)

This is a significant and positive change in the Florida law as it pertains to trusses, particularly when compared to where we were as an industry. There are several nuances to this change that are important to understand, that we will detail in the future.

CONCLUSION

Each situation above provides us with a great example of what occurs when there is a willingness to find common ground with the various stakeholders involved in the issues, there is a solid team in place that provides perspective and wise counsel, and we are united in spirit and mission to do what is in the best interest of our industry overall. It is also very important to work hard at extending olive branches to those with whom we must have solid and positive working relationships, which we have done in every case. Our industry and the specific teams involved have accomplished very significant work here.

61G15-31.003 Design of Structures Utilizing Prefabricated Wood Trusses

(1) When a Structural Engineer of Record and a Delegated Engineer exist as may be determined by applicable Florida law, the apportionment of responsibilities between the Structural Engineer of Record and a Delegated Engineer shall be as set forth in Chapter 2 of ANSI/TPI 1-1995, wherein the Structural Engineer of Record is the Building Designer and the Delegated Engineer is the Truss Designer as those terms are defined in said standard.

(2) The Structural Engineer of Record shall provide design requirements in writing to the Delegated Engineer and shall review the design documents of the delegated engineer for conformance to his written instructions in accordance with Chapter 61G15-30.005, F.A.C.

(3) For the purposes of this rule, the following definitions shall apply:

(a) “Truss System” shall mean an assemblage of trusses and truss girders, together with all bracing, connections, and other structural elements and all spacing and locational criteria, that, in combination, function to support the dead, live and wind loads applicable to the roof of a structure with respect to a Truss System for the roof, and the floor of a structure with respect to a Truss System for the floor. A Truss System does not include walls, foundations, or any other structural support systems.
(b) “Truss System Engineer” shall mean an engineer who designs a Truss System.
(c) “Truss Design Engineer” shall mean an engineer who designs individual trusses, but does

not design a Truss System.

(4) An engineer is a Truss System Engineer if he designs a Truss System. Each of the drawings in the Truss System design package for the Truss System shall include a title block bearing the printed name, address, and license number of the Truss System Engineer and the date of the drawing. The design documentation prepared by the Truss System Engineer shall also include a truss placement plan for the Truss System, showing the location and designation of each truss. Said design documentation for the Truss System shall be signed and sealed by the Truss System Engineer. The cover or index sheet of the Truss System design package may be signed and sealed in lieu of signing and sealing each individual sheet, provided that the cover or index sheet contains the following information:

(a) The name, address and license number of the Structural Engineer of Record, if there is one, and the name, address and license number of the Truss System Engineer.
(b) Identification of the project, by address or by lot number, block number, section or subdivision and city or county.
(c) Identification of the applicable building code and chapter(s) that the Truss System design is intended to meet, the engineering design criteria relied upon in designing the Truss System and the truss design loading.
(d) Identification of any computer program used for engineering the Truss System.
(e) An index of the attached Truss System design drawings. The naming and numbering system utilized for the drawings shall be clear as to how many drawings there are in the set and the date and sequence number of each of these drawings shall be included.

(5) An engineer is a Truss Design Engineer if he designs individual trusses, but does not design the Truss System. Each of the drawings in the truss design package for individual trusses shall include a title block bearing the printed name, address, and license number of the Truss Design Engineer and the date of the drawing. The Truss Design documents prepared by the Truss Design Engineer shall be signed and sealed by the Truss Design Engineer. The cover or index sheet of the truss design package may be signed and sealed in lieu of signing and sealing each individual sheet, provided that the cover or index sheet contains the following information:

(a) The name, address and license number of the Structural Engineer of Record, if there is one, and the name, address, and license number of the Truss Design Engineer.
(b) Identification of the project, by address or by lot number, block number, section or subdivision and city or county.
(c) Identification of the applicable building code and chapter(s) that the truss design is intended to meet, the engineering design criteria relied upon in designing the trusses and the truss design loading.
(d) Identification of any computer program used for engineering the trusses.
(e) An index of the attached truss design drawings. The naming and numbering system utilized for the drawings shall be clear as to how many drawings there are in the set and the date and sequence number of each of these drawings.

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