Technical Q & A

Lifting Truss Assemblies

by Ryan J. Dexter, P.E.

BCSI recommendations for handling and installing large assemblies

Following the issue's theme of material handling, we recently received the following question from a component manufacturer.

Question

A local contractor contacted me looking for information on lifting truss assemblies in place. He is working on a job where he would like to build a roof truss assembly on the ground and lift into place as a single unit. Is there general information available that we could provide to the contractor?

Answer

BCSI provides guidelines for handling and installing a set of trusses by constructing an assembly on the ground and lifting it into place using the Alternate Installation Method. BCSI states that the contractor should be sure to install all top chord, web member, and bottom chord lateral restraint and bracing prior to lifting the assembly. (See photo at left.)

Truss assemblies are typically "picked" or lifted from approximately the one-third points of the truss span, but additional locations may be required for long-span trusses and odd truss or roof configurations. Because there are many variables involved in this process, BCSI states that the contractor should "be sure to get the proper Professional Engineering guidance to lift the entire system into place safely and efficiently." This is an important step as there may be additional restraint and bracing required to safely lift the truss units into place. (See photos at right.)

The number of trusses that can be assembled and lifted at one time depends on several factors including the capacity of the crane, the availability and type of hoisting equipment and jobsite space and conditions, to name a few.

Tips for building a set of long-span trusses into a stable base unit on the ground and then lifting into place is also provided. A few years back, ***SBC Magazine*** printed "Developing a Strategy for Long Span Truss Installation" in which the trusses were installed this way: www.sbcmag.info/2004_longspan.pdf.

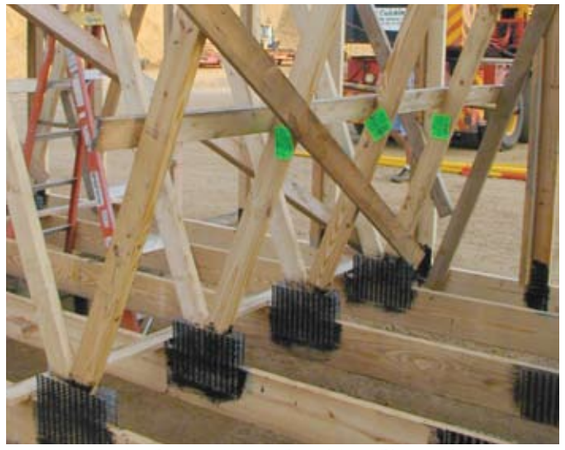
The number of trusses that can be assembled and lifted at one time depends on several factors including the capacity of the crane, the availability and type of hoisting equipment and jobsite space and conditions, to name a few. If the structural sheathing for this roof assembly is 4'x8' sheets of OSB or plywood and the trusses are to be spaced at 2' on center, then the number of trusses in each module will be a multiple of 4 or 5 depending on the layout pattern for the sheathing. However, as you will see from the bottom photo on the facing page, much larger modules can be installed. **SBC**

To pose a question for this column, call the SBCA technical department at 608/274-4849 or email technicalqa@sbcmag.info.

at a glance

- ❑ BCSI recommends using the Alternate Installation Method for lifting and setting truss assemblies.
- ❑ The top chord, bottom chord and webs should be braced prior to lifting the trusses.
- ❑ Always consult a Professional Engineer when setting an assembly with long-span trusses.

Ground Bracing for truss assembly being built on the ground.



Install Web Member Permanent Lateral Restraint and Diagonal Bracing (or web reinforcement) and Bottom Chord Permanent Lateral Restraint and Diagonal Bracing as required.

Sheathing and bracing was applied before hoisting this assembly of more than 20 trusses.

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