

# ECHNICAL Technical Q & A

# Lifting Truss Assemblies

by Ryan J. Dexter, P.E.

**BCSI** recommendations for handling and installing large assemblies

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

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.

# 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.

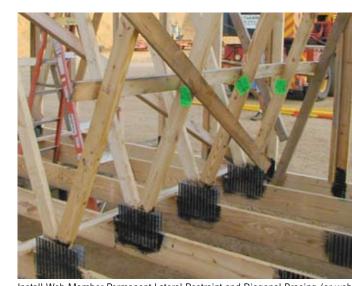
Tips for building a set of long-span trusses into a stable base unit on the ground and then lifting into place is also provided. A few years back, **SBC Magazine** printed "Developing a Strategy for Long Span Truss Installation" in which the trusses were installed this way: www.sbcmag.info/2004 longspan.pdf

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 technicalga@sbcmag.info



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



- Manual Frame Nailing
- Quick Disconnect Air Fittings for Hand Tools
- · Automated Sheathing Nailing - Simple to Use Controls
- Tilt Nailing
- High Load Coil Capacity
- Infinite o/c spacing
- Quick Change Tool Mounts
- 2x4, 2x6, and 2x8 capable
- · Programmable for Under and Overhung Sheathing

#### **Wall Panel Solutions That** Fit Your Business Needs



#### **Viking Wall Panel Systems** 800.328.3402

www.vikingeng.com info@vikingeng.com

For reader service, go to www.sbcmag.info/viking.htm



**Production Machinery Specialists Since 1963** 

#### **New • Used • Refurbished • Reconditioned**

### Over 50,000 sq. ft. warehouse filled with equipment to meet your needs: Gantry w/Auto-Stackers

- ADT "FASTRAC" Bridge Nailer
- ADT Wall Panel Lines
- Alpine 14'6" Finish Roller Alpine Model 725D Finish
- Rollers(15'6") - Alpine Speed Roll TW
- Floortruss Machine - ASI FWA-500 Floor Web
- ASI Stretch Roller Bed
- ASI Roller Bed Trailer
- Clary 329 Short Cutters II - EMŚI Model #305 20'
- Lumber Conveyor
- Jager TTS Auto Stacker Klaisler RolSplice Machine
- 30 Material Handling Carts 2 - Monet B500 Componen
- 2 Pacific Automation Auto 8's

1 - Mango Tech "Wall

Extruder" 2006

- 2 Pacific Automation 5 Strand Live Decks
- 4 Pacific Automation Auto-Roll 14TR Gantry Rollers 1 - Pacific Automation
- Auto-Roll 14' capacity
- 2 Pacific Automation 125 J-Slot Gantry Lines

- 5 Klaisler Powered Outfeed Automation Hardware Roller Systems Pacific Automation Floor 2 – Koskovich Auto-OMNI. 5 Heads with Ink Jet Printe
  - Gantry w/Auto-Stacker Paslode Model CN70 Sub

with Koskovich Jet-Set

- Component Nailer - Robbins Valley Set Shape
- 1 Robbins 7 Station Lumber Carousel
- Speedcut MetraCut w/Mango Automation
- Speedcut EWC Web Saw - Spida Model CXTM R/A Saw with Hain Measuring
- 1 TCT Model 1150 w/ Mathews
- Ink Jet System (2005) 1 - Weima Model 1300 "TIGER" Wood Grinde



1002 Buffalo Trail • Morristown, TN 37814 Office: (888)USE-WOOD (873-9663) Fax: (423)586-0483 info@masengills.com

For reader service, go to www.sbcmaq.info/masenaill.htm

August 2010 Structural Building Components Magazine Structural Building Components Magazine www.sbcmag.info www.sbcmag.info



## www.sbcmag.info

#### Dear Reader:

Copyright © 2010 by Truss Publications, Inc. All rights reserved. For permission to reprint materials-from *SBC Magazine*, call 608/310-6706 or email editor@sbcmag.info.

The mission of *Structural Building Components Magazine (SBC)* is to increase the knowledge of and to promote the common interests of those engaged in manufacturing and distributing of structural building components to ensure growth and continuity, and to be the information conduit by staying abreast of leading-edge issues. SBC will take a leadership role on behalf of the component industry in disseminating technical and marketplace information, and will maintain advisory committees consisting of the most knowledgeable professionals in the industry. The opinions expressed in SBC are those of the authors and those quoted solely, and are not necessarily the opinions of any affiliated association (SBCA).

