Open-Web Truss Long Span Installation Guidelines

RedBuilt™ has maintained a policy of manufacturing and marketing products of the highest quality to our customers. We guarantee the design, materials and workmanship of open-web trusses as set forth in the Terms and Conditions of Sale contained in the Purchase Agreement. This guarantee applies so long as the open-web trusses are installed in accordance with the RedBuilt™ drawings and in a workmanlike manner; and are not cut, notched, drilled, or in any way altered or damaged also as set forth in the Terms and Conditions of Sale.

These guidelines are prepared to assist our customer in a successful and profitable construction experience. RedBuilt™ does not guarantee, and is neither responsible nor liable for, the installation or the quality of such installation nor does it assume responsibility for any damages or defects caused by others.

The guidelines set forth in this bulletin constitute recommendations and suggested steps to help our customers avoid costly accidents. These guidelines are the result of analysis of thousands of projects where RedBuilt™ systems have been successfully installed. They are not intended to cover every condition of installation or to describe every move to be made. Each installation situation is unique and must be carefully planned and executed by the contractor responsible for the installation.

SUMMARY

These guidelines recommend procedures that encourage the maximum permanent installation of bridging, and sheathing on the ground rather than in the air.

1. Study the RedBuilt™ drawings carefully. Read these guidelines carefully. PLAN THE INSTALLATION**. (See Section I)**
2. Construct a cross-braced box frame (truss module) at least 8 feet wide of the first few trusses to be set. **(See Figure A)**
3. Make sure that before releasing the crane that this truss module (a) is set to accurate horizontal alignment, (b) is plumb at each bracing point and (c) is solidly and permanently braced. **(See Figures B & C)**
4. Connect subsequent truss modules solidly to the previously set module before continuing to the next lift. **(See Section III, E)**

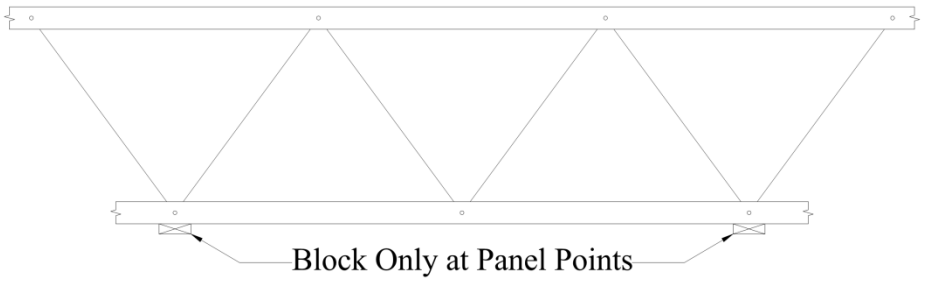
SECTION I: PLAN THE INSTALLATION

1. Study the RedBuilt™ drawings to plan the installation procedure. (**See Section III**)
2. Plan a storage area prior to delivery. (**See Section II**)
3. Plan for the right equipment to be available for installation.
4. Plan your manpower needs to accomplish the fastening and bracing installation without holding up the installation equipment.

SECTION II: UNLOADING & STORAGE

A. UNLOADING

1. The trusses will arrive bundled and banded. If possible, leave them bundled until ready to assemble and install. Trusses must be braced prior to unbundling, to prevent injury or damage to trusses.
2. Trusses weigh about 10 to 12 pounds per linear foot. There will be up to 15 trusses in a bundle.
3. Use a crane or forklift with sufficient capacity to make the lift. Use an experienced operator and be sure the lift is rigged properly.
4. Set the bundles on blocks placed under the panel points to keep trusses up out of mud and/or standing water.



B. STORAGE

1. The area selected for storage should be as near the location of assembly of installation as possible. The floor of the building is an excellent area for off-loading.
2. Any area selected should be as level as possible. Use blocking to level uneven ground.
3. Some long trusses are delivered in halves and must be spliced together. The halves are not always identical at the splice points. Be sure to identify each half and store them where they will be most accessible for assembly and installation.

SECTION III: ASSEMBLY & INSTALLATION

A. PREPARATION - TOOLS, EQUIPMENT, CREW

1. Plan the assembly and installation ahead of time and then follow the plan.
2. Have a crane available of adequate capacity and boom length to easily reach the pick-up point and setting position.
3. Have properly sized strong backs, spreader bars and rigging lines prepared and available. Also have ropes available for a guideline from each end of the lift. See Figure B & C.
4. Have small tools available such as wrenches and drift pins for 5/8", 3/4", 1", 1-1/4" bolts, pinch or crow bars, carpenter tools, levels or plumb bobs, and string line for checking straightness.
5. Have plenty of extra 2x4 and 2x6 lumber available for temporary blocking, shoring and bracing.
6. Have your crew ready. Discuss your plan with them. Make sure each person understands their role.
7. If the crane must travel with a load, be sure the roadway is smooth and solid.

B. BUILDING PREPARATION

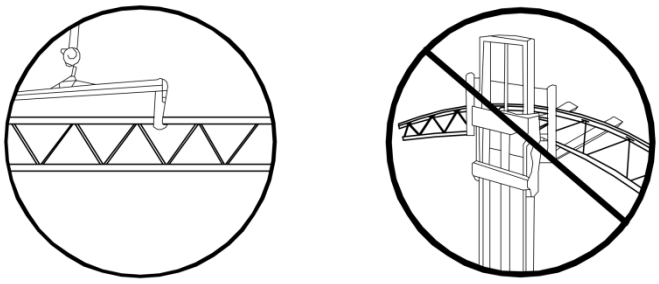
1. Shore up bearing walls - be sure the truss support points are straight and parallel and held solidly.
2. Measure the bearing dimension distance and verify that it will fit the truss as detailed on the RedBuilt™ drawings.
3. Pre-mark the truss positions very accurately along the support bearing plate, using information from the RedBuilt™ drawings. Place the mark on the plate so that it will still be visible after the trusses are in place.

C. ASSEMBLY

1. Install bearing connections per the RedBuilt™ drawings.
2. Some trusses are fabricated as a single unit but longer spans will be fabricated in two pieces and will require splices in both chords at the mid-point. See details on RedBuilt™ drawings.

D. CAUTIONS

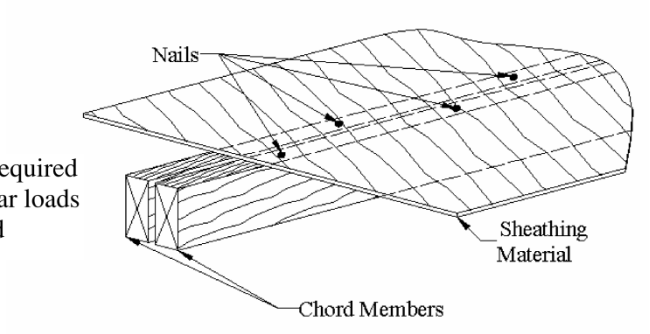
1. **DO NOT** attempt to install long span trusses in a strong wind.
2. Trusses are unstable laterally until attached to an adequate bracing system. Bridging and X-bracing should be installed as module construction proceeds. No truss should be left without a proper and solid connection to a braced system.
3. Trusses must be kept in a vertical position while being moved or placed.



This **Not This**

4. Top chords of the trusses must be kept in a straight alignment as truss modules are constructed.
5. Trusses cannot be lifted into place until sheathing has been applied. Sheathing is a vital component of lateral stability.

6. The nailing pattern for attachment of sheathing material should be staggered to assure nailing to each member of a two-member chord.



7. Call your RedBuilt™ representative if you have any problems with fit, damage or require modification.

E. RECOMMENDED PROCEDURE

Pre-assemble two or more trusses into a truss module. Minimum 8′ wide units. See Figure A. Refer to RedBuilt™ drawings for more information.

First Lift:

1. Identify the truss piece marks and the location in the building from the RedBuilt™ drawings.
2. Provide a minimum of four support points for the trusses, locate at panel points.
3. In the assembly area stand the first full span truss plumb and straight and brace the top chord with struts to hold in position.
4. Hold second full span truss plumb and straight and at the proper space away from first truss.
5. String a tight line from bearing to bearing so that the alignment of each chord is within ½″ of a straight line.
6. Drop a plumb bob or level line at each bridging point to recheck that the trusses are within ½″ of vertical alignment.
7. Install sections of permanent bridging and X-bracing where shown on RedBuilt™ drawings.
8. Install sheathing over the trusses, nailing as shown on RedBuilt™ drawings.

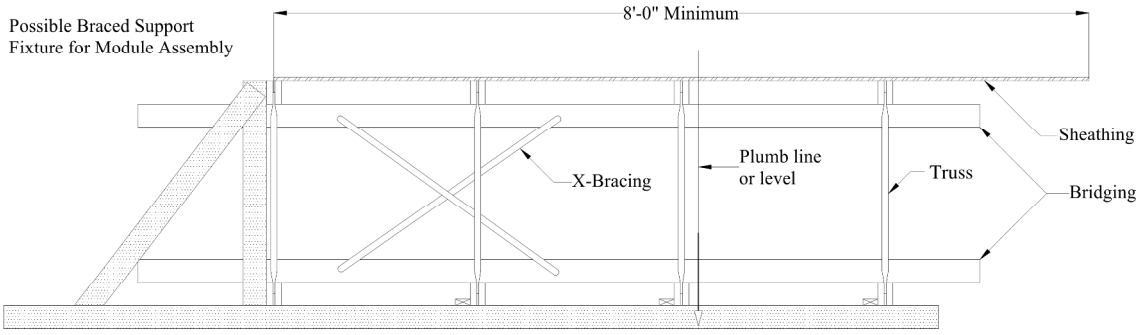


Figure A

9. Place lift bars at pick points. If the pick points are not designated on the RedBuilt™ drawings then use the panel point nearest the third point of the truss.

10. Use either nylon sling or steel cables for lift lines. If steel cables are used protect the truss chords from possible damage by the cables. See Figure B.

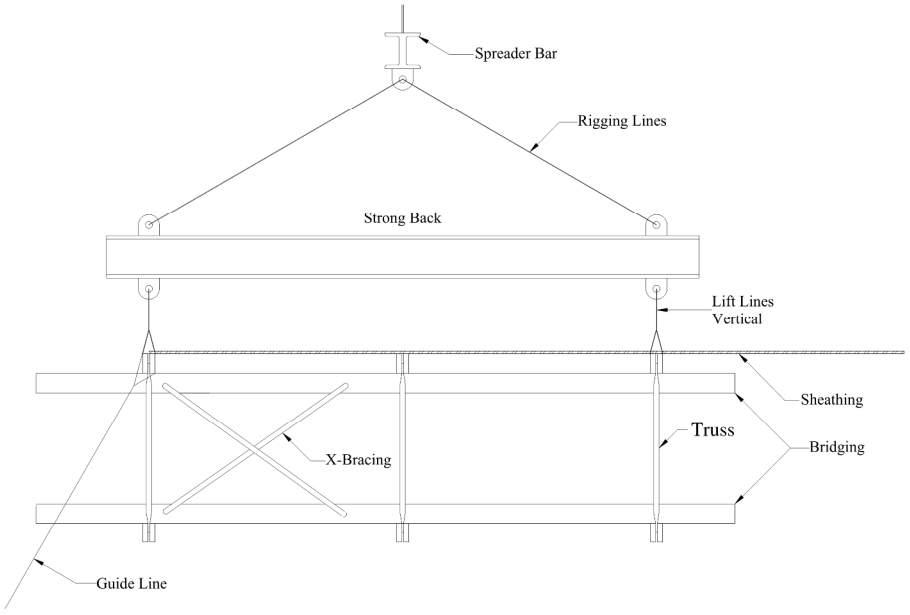


Figure B

11. Attach guideline ropes to each end of the truss modules. Assign a man to control each end to avoid collisions during the lift.
12. Set in position. Use a man at each support to place the trusses in the correct previously marked location.

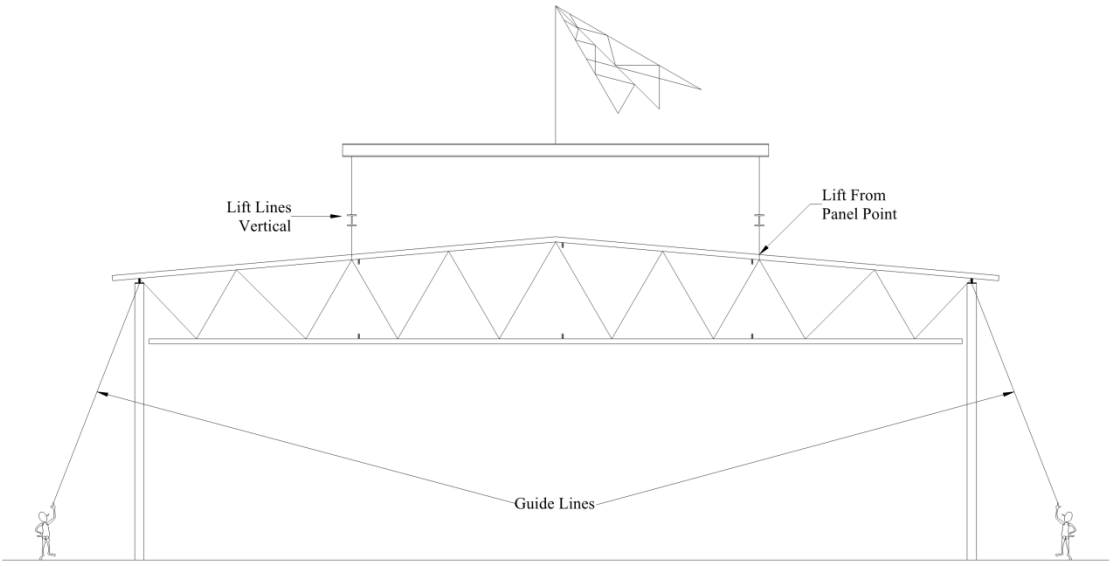


Figure C

13. Recheck horizontal alignment and plumbness.

    This is the most critical step in the installation procedure. Before releasing the crane, ensure that the first truss module is aligned properly. Extra attention at this point will ensure the remainder of the installation will progress rapidly.

14. Adjust the truss module position lengthwise to equalize the bearing on each support. Attach permanent bearing connections to the support after first truss module is set and the accuracy of their final position is assured. Consult your RedBuilt™ drawings.

Subsequent Lifts:

1. Continue the installation on a braced box basis using the previously installed unit as an anchor.
2. Install permanent bridging and X-bracing on each set where located on RedBuilt™ drawings and connect to those previously set before releasing from crane.
3. Fill in any remaining roof sheathing between modules as soon as modules are in position.

F. SINGLE JOIST INSTALLATION

This method is NOT recommended for long span trusses or trusses with center splices because of the instability of the trusses laterally.