



This safety alert symbol is used to attract your attention! **PERSONAL SAFETY IS INVOLVED!** When you see this symbol - **BECOME ALERT - HEED ITS MESSAGE.**



**CAUTION:** A CAUTION identifies safe operating practices or indicates unsafe conditions that could result in personal injury or damage to structures.



**DANGER:** A DANGER designates a condition where failure to follow instructions or heed warning will most likely result in serious personal injury or death or damage to structures.



**WARNING:** A WARNING describes a condition where failure to follow instructions could result in severe personal injury or damage to structures.

# HIB-91 Summary Sheet

## COMMENTARY and RECOMMENDATIONS for HANDLING, INSTALLING & BRACING METAL PLATE CONNECTED WOOD TRUSSES ©



*It is the responsibility of the installer (builder, building contractor, licensed contractor, erector or erection contractor) to properly receive, unload, store, handle, install and brace metal plate connected wood trusses to protect life and property. The installer must exercise the same high degree of safety awareness as with any other structural material. TPI does not intend these recommendations to be interpreted as superior to the project Architect's or Engineer's design specification for handling, installing and bracing wood trusses for a particular roof or floor. These recommendations are based upon the collective experience of leading technical personnel in the wood*

*truss industry, but must, due to the nature of responsibilities involved, be presented as a guide for the use of a qualified building designer or installer. Thus, the Truss Plate Institute, Inc. expressly disclaims any responsibility for damages arising from the use, application or reliance on the recommendations and information contained herein by building designers, installers, and others. Copyright © by Truss Plate Institute, Inc. All rights reserved. This document or any part thereof must not be reproduced in any form without written permission of the publisher. Printed in the United States of America.*



**CAUTION:** The builder, building contractor, licensed contractor, erector or erection contractor is advised to obtain and read the entire booklet "Commentary and Recommendations for Handling, Installing & Bracing Metal Plate Connected Wood Trusses, HIB-91" from the Truss Plate Institute.



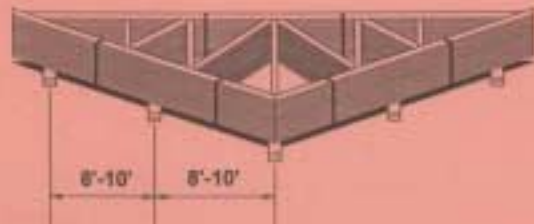
**CAUTION:** All temporary bracing should be no less than 2x4 grade marked lumber. All connections should be made with minimum of 2-16d nails. All trusses assumed 2' on-center or less. All multi-ply trusses should be connected together in accordance with design drawings prior to installation.



### TRUSS STORAGE



**CAUTION:** Trusses should not be unloaded on rough terrain or uneven surfaces which could cause damage to the truss.



**CAUTION:** Trusses stored horizontally should be supported on blocking to prevent excessive lateral bending and lessen moisture gain.



**WARNING:** Do not break banding until installation begins. Care should be exercised in banding removal to avoid shifting of individual trusses.



**WARNING:** Do not lift bundled trusses by the bands. Do not use damaged trusses.



**CAUTION:** Trusses stored vertically should be braced to prevent toppling or tipping.



**DANGER:** Do not store bundles upright unless properly braced. Do not break bands until bundles are placed in a stable horizontal position.



**DANGER:** Walking on trusses which are lying flat is extremely dangerous and should be strictly prohibited.

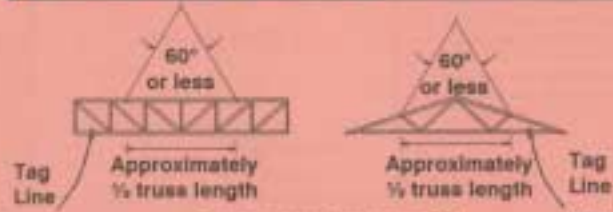


**WARNING:** Do not attach cables, chains, or hooks to the web members.



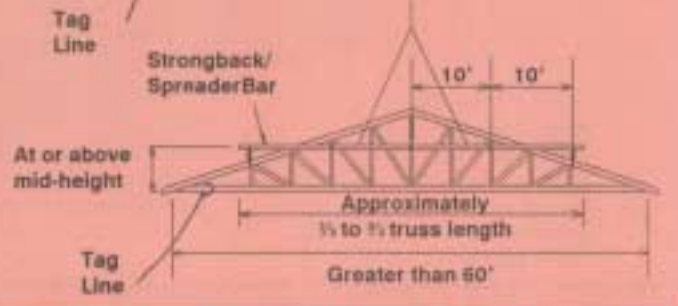
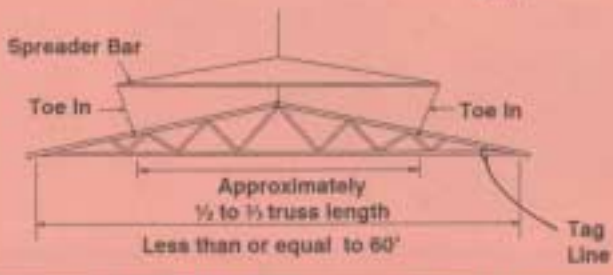
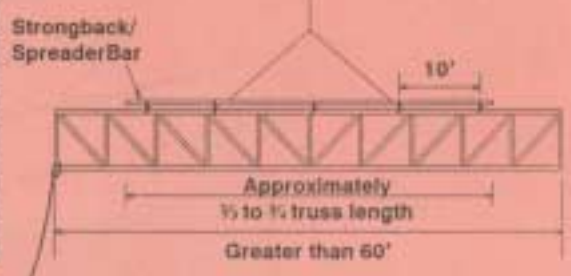
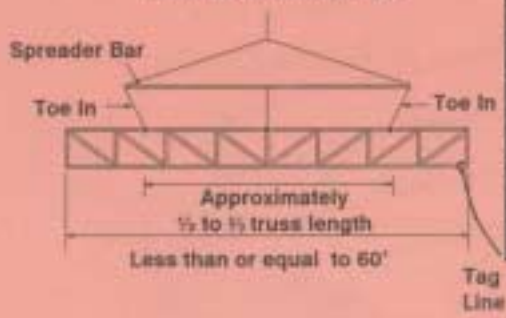
**WARNING:** Do not lift single trusses with spans greater than 30' by the peak.

**MECHANICAL INSTALLATION**



Truss spans less than 30'.

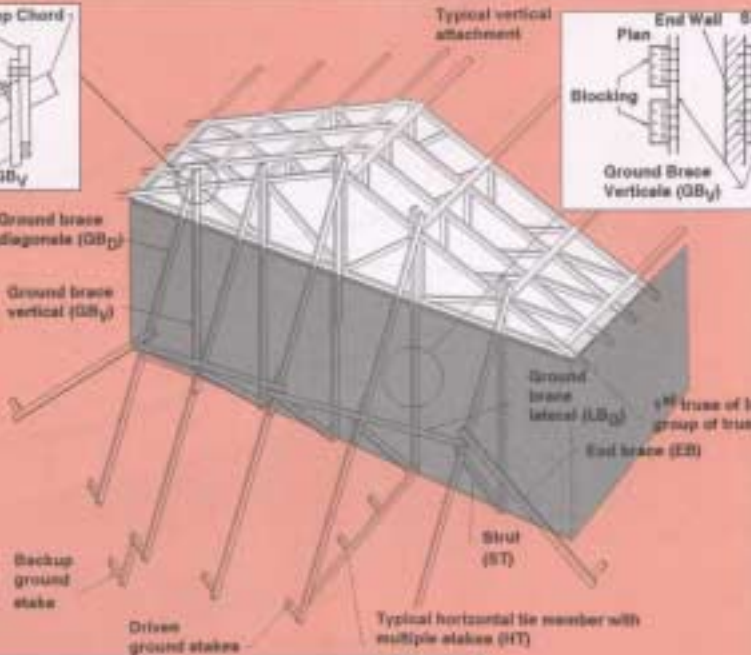
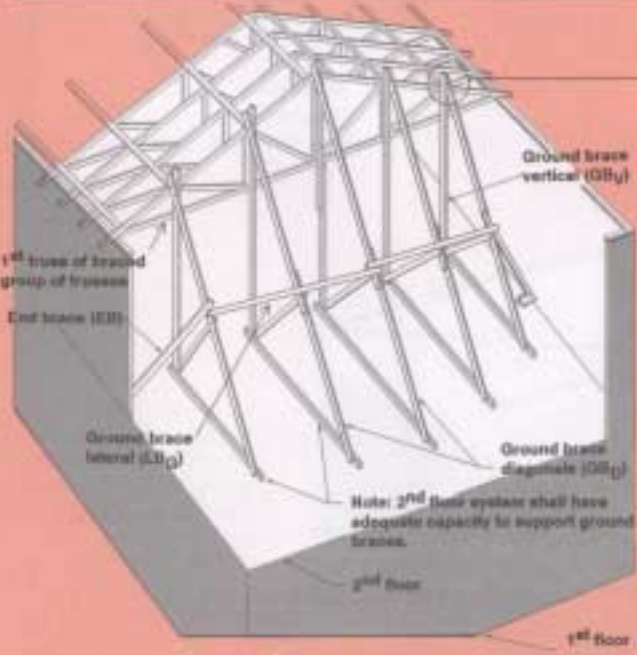
Lifting devices should be connected to the truss top chord with a closed-loop attachment utilizing materials such as slings, chains, cables, nylon strapping, etc. of sufficient strength to carry the weight of the truss. Each truss should be set in proper position per the building designer's framing plan and held with the lifting device until the ends of the truss are securely fastened and temporary bracing is installed.



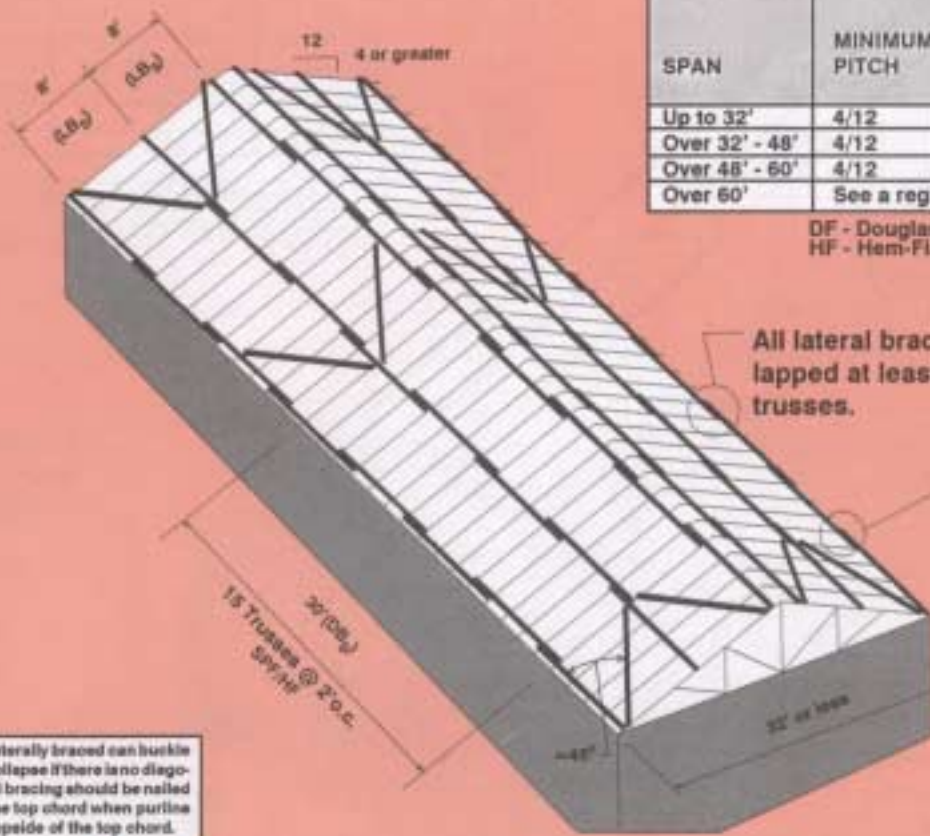
**CAUTION:** Temporary bracing shown in this summary sheet is adequate for the installation of trusses with similar configurations. Consult a registered professional engineer if a different bracing arrangement is desired. The engineer may design bracing in accordance with TPI's *Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses, DSB-89*, and in some cases determine that a wider spacing is possible.

**GROUND BRACING: BUILDING INTERIOR**

**GROUND BRACING: BUILDING EXTERIOR**

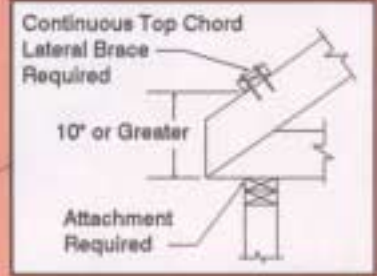


**CAUTION:** Ground bracing required for all installations.



SPAN	MINIMUM PITCH	TOP CHORD LATERAL BRACE SPACING (LB <sub>g</sub> )	TOP CHORD DIAGONAL BRACE SPACING (DB <sub>g</sub> ) [# trusses]	
			SP/DF	SPF/HF
Up to 32'	4/12	6'	20	15
Over 32' - 48'	4/12	6'	10	7
Over 48' - 60'	4/12	5'	6	4
Over 60'	See a registered professional engineer			

DF - Douglas Fir-Larch  
 HF - Hem-Fir  
 SP - Southern Pine  
 SPF - Spruce-Pine-Fir



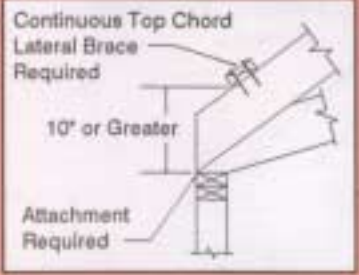
Top chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing. Diagonal bracing should be nailed to the underside of the top chord when purlins are attached to the topside of the top chord.

**PITCHED TRUSS**

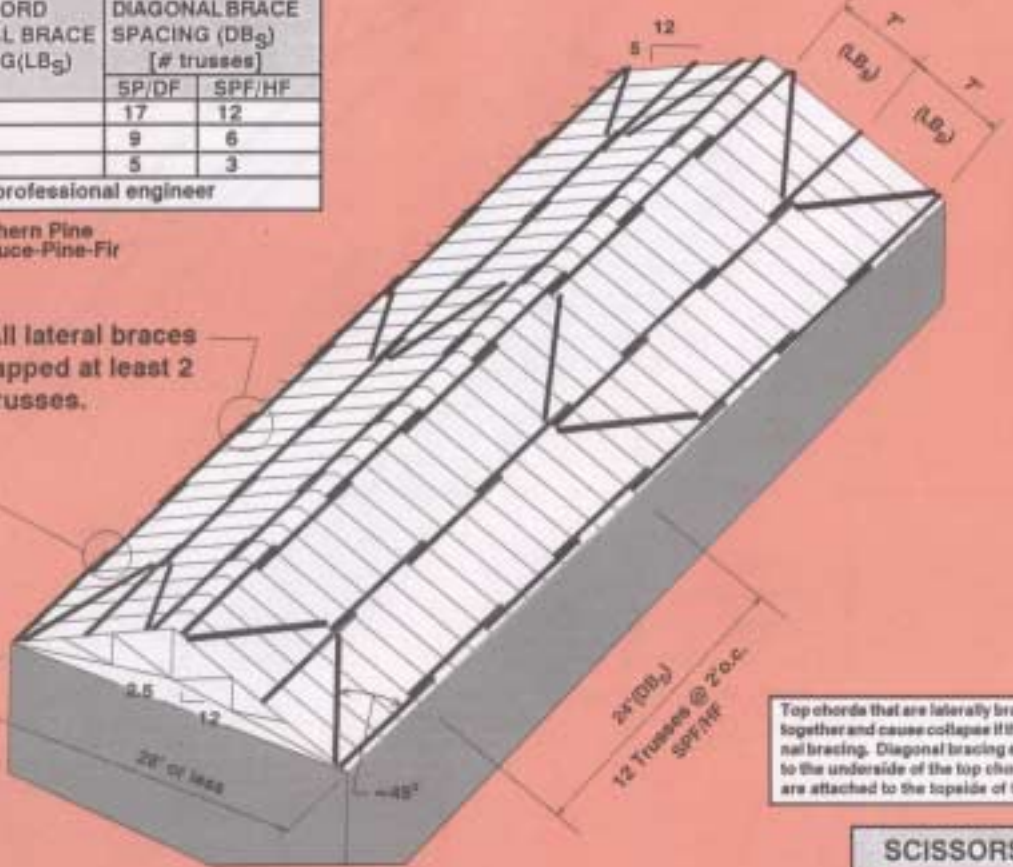
**WARNING:** Failure to follow these recommendations could result in severe personal injury or damage to trusses or buildings.

SPAN	MINIMUM PITCH DIFFERENCE	TOP CHORD LATERAL BRACE SPACING (LB <sub>g</sub> )	TOP CHORD DIAGONAL BRACE SPACING (DB <sub>g</sub> ) [# trusses]	
			SP/DF	SPF/HF
Up to 28'	2.5	7'	17	12
Over 28' - 42'	3.0	6'	9	6
Over 42' - 60'	3.0	5'	5	3
Over 60'	See a registered professional engineer			

DF - Douglas Fir-Larch  
 HF - Hem-Fir  
 SP - Southern Pine  
 SPF - Spruce-Pine-Fir



All lateral braces lapped at least 2 trusses.



Top chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing. Diagonal bracing should be nailed to the underside of the top chord when purlins are attached to the topside of the top chord.

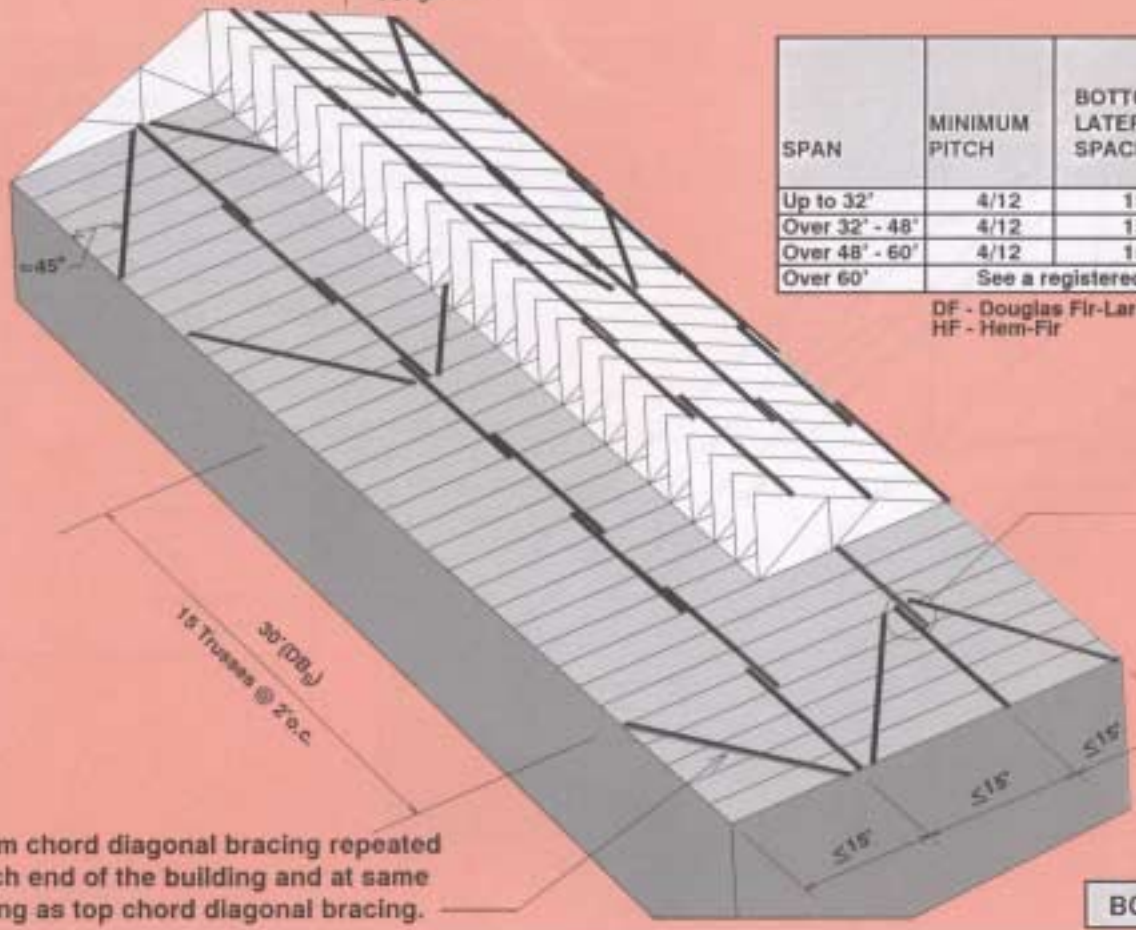
**SCISSORS TRUSS**

4 or greater

SPAN	MINIMUM PITCH	BOTTOM CHORD LATERAL BRACE SPACING(LB <sub>S</sub> )	BOTTOM CHORD DIAGONAL BRACE SPACING (DB <sub>S</sub> ) [# trusses]	
			SP/DF	SPF/HF
Up to 32'	4/12	15'	20	15
Over 32' - 48'	4/12	15'	10	7
Over 48' - 60'	4/12	15'	6	4
Over 60'	See a registered professional engineer			

DF - Douglas Fir-Larch  
HF - Hem-Fir

SP - Southern Pine  
SPF - Spruce-Pine-Fir

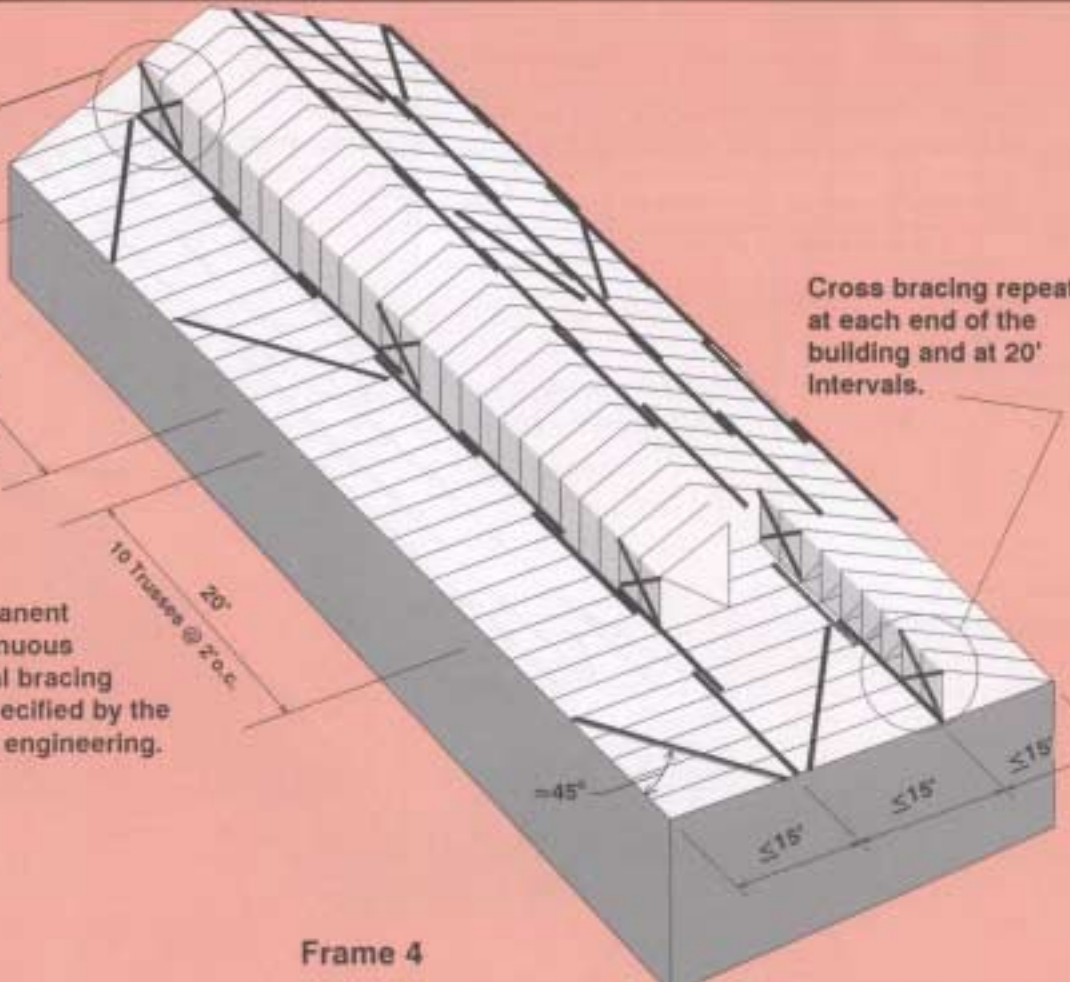


All lateral braces lapped at least 2 trusses.

Bottom chord diagonal bracing repeated at each end of the building and at same spacing as top chord diagonal bracing.

**BOTTOM CHORD PLANE**

**WARNING:** Failure to follow these recommendations could result in severe personal injury or damage to trusses or buildings.



Cross bracing repeated at each end of the building and at 20' intervals.



Permanent continuous lateral bracing as specified by the truss engineering.

**WEB MEMBER PLANE**

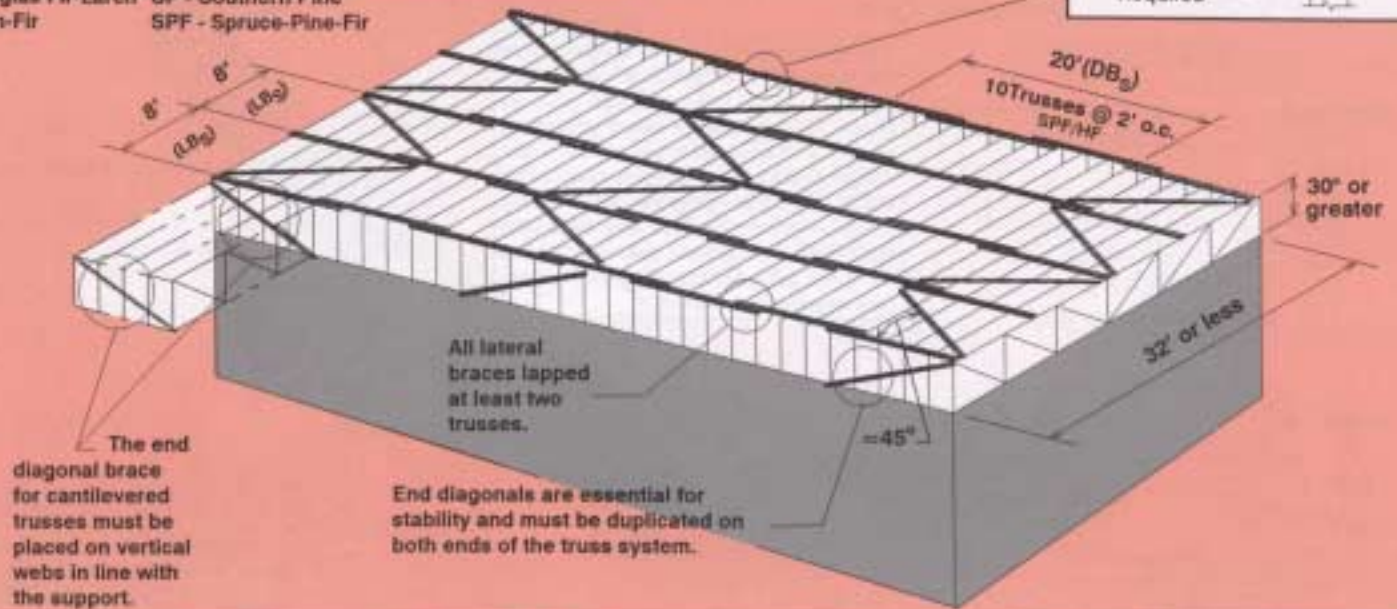
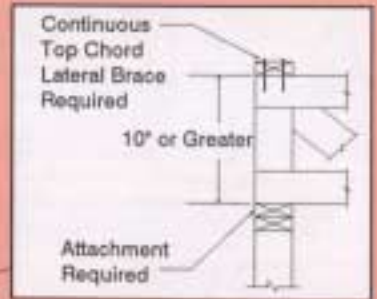
SPAN	MINIMUM DEPTH	TOP CHORD LATERAL BRACE SPACING (LB <sub>o</sub> )	TOP CHORD DIAGONAL BRACE SPACING (DB <sub>o</sub> ) [# trusses]	
			SP/DF	SPF/HF
Up to 32'	30"	8'	16	10
Over 32' - 48'	42"	6'	6	4
Over 48' - 60'	48"	5'	4	2
Over 60'	See a registered professional engineer			

DF - Douglas Fir-Larch  
HF - Hem-Fir

SP - Southern Pine  
SPF - Spruce-Pine-Fir

### 2x4/2x6 PARALLEL CHORD TRUSS

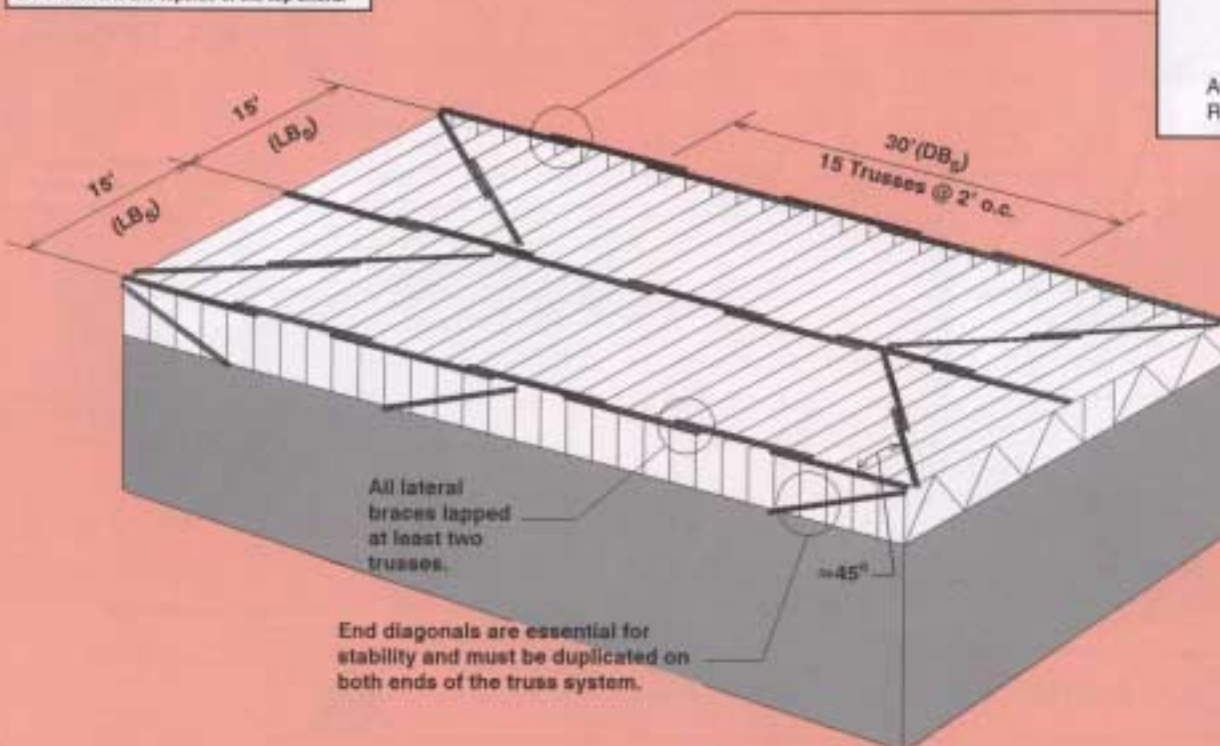
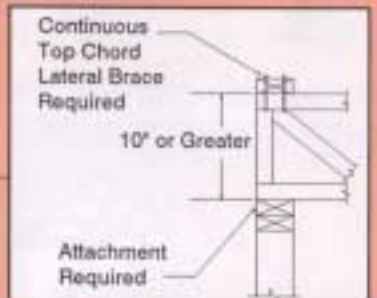
Top chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing. Diagonal bracing should be nailed to the underside of the top chord when purlins are attached to the topside of the top chord.



**WARNING:** Failure to follow these recommendations could result in severe personal injury or damage to trusses or buildings.

### 4x2 PARALLEL CHORD TRUSS: TOP CHORD

Top chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing. Diagonal bracing should be nailed to the underside of the top chord when purlins are attached to the topside of the top chord.

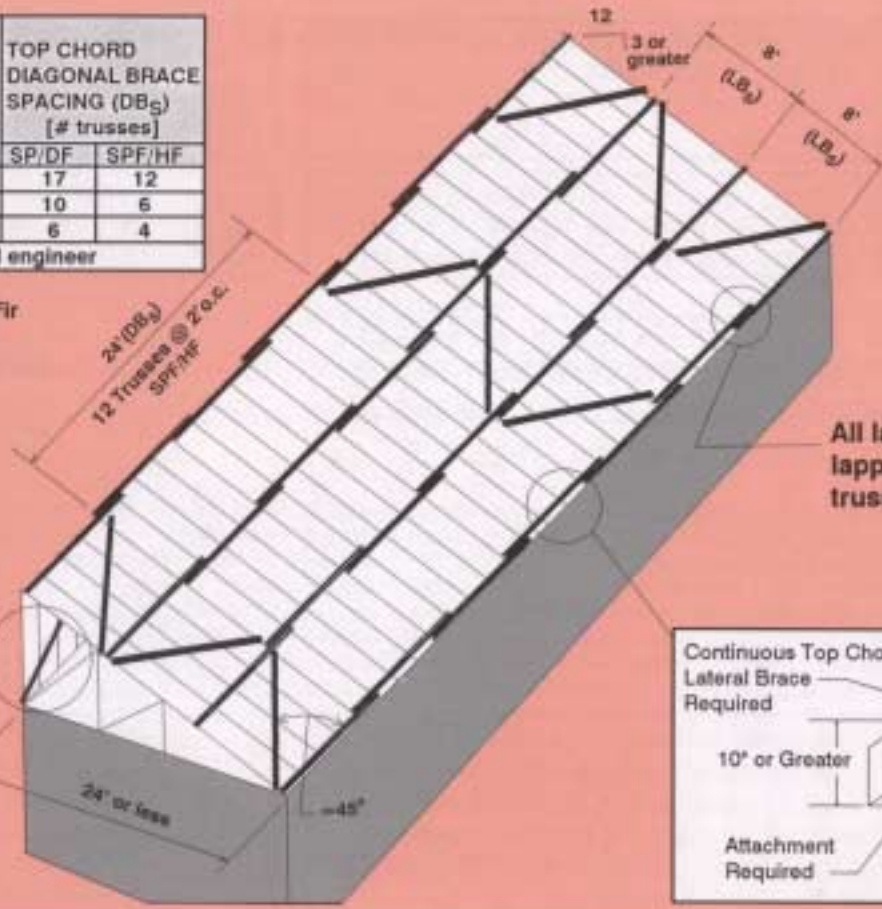


Trusses must have lumber oriented in the horizontal direction to use this brace spacing.

SPAN	MINIMUM PITCH	TOP CHORD LATERAL BRACE SPACING (LB <sub>2</sub> )	TOP CHORD DIAGONAL BRACE SPACING (DB <sub>2</sub> ) [# trusses]	
			SP/DF	SPF/HF
Up to 24'	3/12	8'	17	12
Over 24' - 42'	3/12	7'	10	6
Over 42' - 54'	3/12	6'	6	4
Over 54'	See a registered professional engineer			

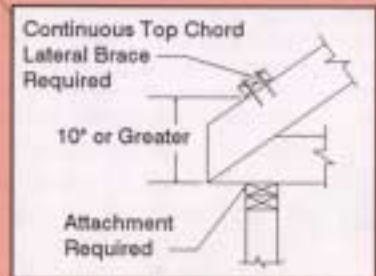
DF - Douglas Fir-Larch  
HF - Hem-Fir

SP - Southern Pine  
SPF - Spruce-Pine-Fir



Diagonal brace also required on end verticals.

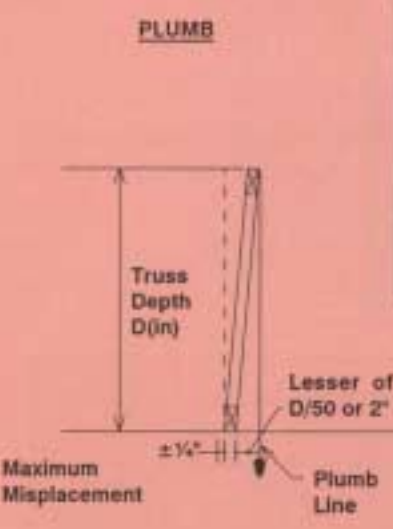
Top chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing. Diagonal bracing should be nailed to the underside of the top chord when purlins are attached to the topside of the top chord.



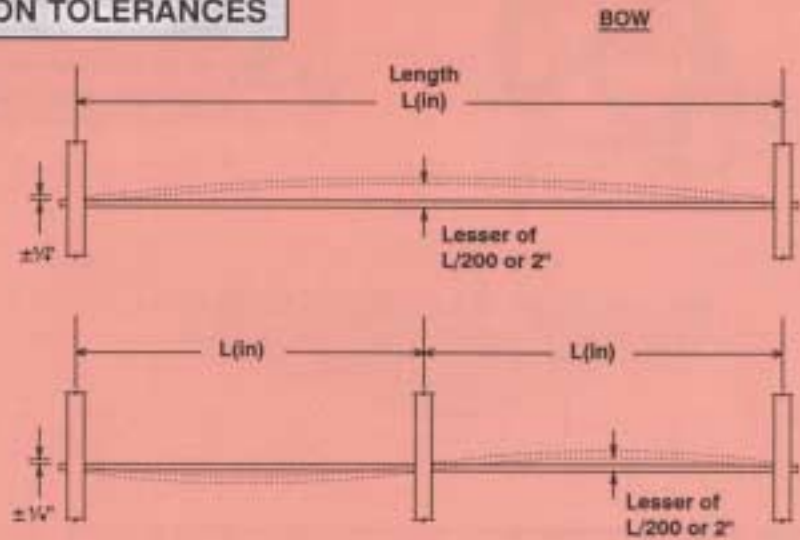
**MONO TRUSS**

**WARNING:** Failure to follow these recommendations could result in severe personal injury or damage to trusses or buildings.

**INSTALLATION TOLERANCES**



D(in)	D/50	D(ft)
12"	1/4"	1'
24"	1/2"	2'
36"	3/4"	3'
48"	1"	4'
60"	1-1/4"	5'
72"	1-1/2"	6'
84"	1-3/4"	7'
96"	2"	8'
108"	2"	9'



L(in)	L/200	L(ft)
50"	1/4"	4.2'
100"	1/2"	8.3'
150"	3/4"	12.5'

L(in)	L/200	L(ft)
200"	1"	16.7'
250"	1-1/4"	20.8'
300"	1-1/2"	25.0'

**OUT-OF-PLUMB INSTALLATION TOLERANCES.**

**WARNING:** Do not cut trusses.

**OUT-OF-PLANE INSTALLATION TOLERANCES.**

**DANGER:** Under no circumstances should construction loads of any description be placed on unbraced trusses.