

FIGURE CFSB3-16 (4' On-Center)

**Permanent Restraint/Bracing for the Top Chord in a Piggyback Assembly for Trusses Spaced @ 4'-0" On-Center**

✓ A critical consideration with a Piggyback assembly is to brace the Top Chord of the supporting Truss located directly beneath the cap Truss to prevent it from buckling. Bracing for this portion of the Top Chord is accomplished in several ways, including:

- Rows of Continuous Lateral Restraint (CLR) and Diagonal Bracing (see Figure CFSB3-36 below). Refer to Table 2 of this insert for the minimum size and attachment of Lateral Restraint and Diagonal bracing unless otherwise specified
- Connecting the CLR into the roof Diaphragm
- Adding Structural Sheathing
- Some other equivalent means

*Una consideración crítica con un ensamblaje de Piggyback es de arriostrar la Cuerda Superior del Truss soportante localizado directamente debajo el Truss de capa para prevenir que se torcer. Arriostre para esta parte de la Cuerda Superior lleva a cabo por varias maneras incluyendo:*

- Filas de Restricción Lateral Continua (CLR) y Arriostre Diagonal (vea Figura CFSB3-36 a la derecha). Refiera a la Tabla 2 de esta encarte para el tamaño mínimo y sujete de la Restricción Lateral y el Arriostre Diagonal a meno que especificado de otra manera
- Conectar el CLR en el diafragma del techo
- Añadir el Entablado Estructural
- Algunas otras maneras equivalentes

**NOTICE** If Diagonal Bracing is used to restrain the CLR(s) and to transfer the cumulative force from the CLR(s) into the roof Diaphragm, repeat the Diagonal Bracing at 8' intervals or as specified. Closer spacing may be required by the Building Designer. Attach the Diagonal Bracing to the Top Chord of each supporting truss with 3-#10 SDS or as specified.

*Si el Arriostre Diagonal es utilizado para restringir el CLR y para transferir la fuerza acumulativa del CLR a la Diafragma de techo, repite el Arriostre Diagonal en intervalos de 8 pies o como especificado. El espaciamento más cercano puede ser requerido por el Diseñador del Edificio. Sujete el Arriostre Diagonal a la Cuerda Superior de cada truss soportante con 3-#10 SDS o como especificado.*

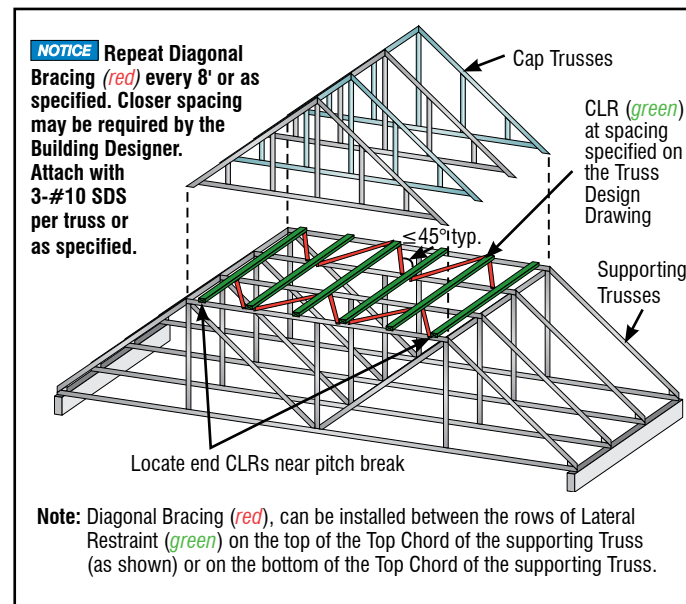


FIGURE CFSB3-36 (4' On-Center)

**MODIFICATIONS TO CHAPTERS CFSB1, B2 & B3**  
For use with Trusses spaced at 4'-0" on-center and up to 80'-0" in length

**INSTALLATION RESTRAINT & BRACING OF TRUSSES**

Follow the recommendations provided in Chapters CFSB1 - Guide for Handling, Installing, Restraining & Bracing of Trusses and CFSB2 - Setting Trusses and Installation Restraint/Bracing of the CFSBCSI Booklet EXCEPT:

- ✓ The minimum size steel section used as Lateral Restraint and Diagonal Bracing is 33 mil 1-1/2" (38 mm) furring (hat) channel (150F125-33) or 33 mil 2-1/2" (64 mm) unpunched stud section (250S162-33) unless specified by the Building Designer. See Table 1 below for additional information. Attach to each truss with minimum 2 - #10 self-drilling tapping screws (SDS), with minimum end distance and spacing between screws of 5/8" and minimum edge distance of 3/8", unless otherwise specified.

*Sigue las recomendaciones provistas en Capítulos CFSB1 – Guía de Buena Práctica para el Manejo, Instalación, Restricción y Arriostre de los Trusses y CFSB2 – Colocación de Trusses y Restricción/Arriostre de Instalación del CFSBCSI Folleto EXCEPTO:*

*El tamaño mínimo de la sección del acero utilizado como Restricción Lateral y Arriostre Diagonal es 33 mil 1-1/2" (38 mm) furring (hat) channel (150F125-33) o 33 mil 2-1/2" (64 mm) de sección de tachuela sin perforadora (250S162-33) a menos que especificado por el Diseñador del Edificio. Vea la Tabla 1 abajo para más información. Sujete a cada truss con un mínimo de 2 - #10 tornillos autoperforantes (SDS), con la mínima distancia de extremo espaciamento entre los tornillos de 5/8" y la distancia del borde mínima de 3/8", a menos que es especificado otra.*

**Top Chord Installation Lateral Restraint and Diagonal Bracing for Trusses Spaced @ 4'-0" On-Center**

Truss Span	Truss Spacing	Lateral Restraint		Diagonal Bracing <sup>2</sup>	
		TCILR Spacing	Min. Size/Grade	Min. Size/Grade	Max. Spacing <sup>3</sup>
Up to 30' (9.1 m)	4' (1.2 m)	10' (3 m) o.c. max.	150F125-33 or 250S162-33	150F125-33 or 250S162-33	20' (6.1 m)
30' (9.1 m) - 45' (13.7 m)	4' (1.2 m)	8' (2.4 m) o.c. max.		150F125-33 or 250S162-33	20' (6.1 m)
45' (13.7 m) - 60' (18.3 m)	4' (1.2 m)	6' (1.8 m) o.c. max.		250S162-33 or Double #150F125-33	20' (6.1 m)
60' (18.3 m) - 80' (24.4 m) <sup>5</sup>	4' (1.2 m)	4' (1.2 m) o.c. max.		150F125-33 or Double #150F125-33	12' (3.7 m)

<sup>1</sup>Assumes stud sections "S" are unpunched.  
<sup>2</sup>Table assumes top chords are minimum 33 mil with a yield stress of 50 ksi.  
<sup>3</sup>Maximum spacing between sets of diagonal bracing assumes ground bracing is properly installed and in place.  
<sup>4</sup>Double assumes nested 2-piece 150F125-33 attached together with #10 SDS at 12" (300 mm) o.c.  
<sup>5</sup>Consult a registered design professional for trusses longer than 60' (18.3 m).  
**Note:** This Table replaces Table CFSB1-4 and CFSB2-1 in the CFSBCSI Booklet when installing trusses spaced at 4'-0" on-center.

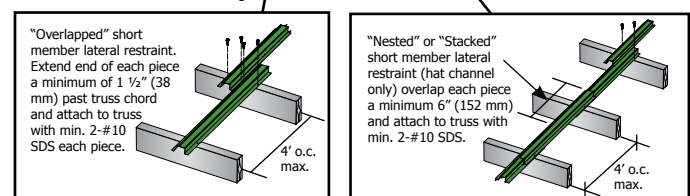
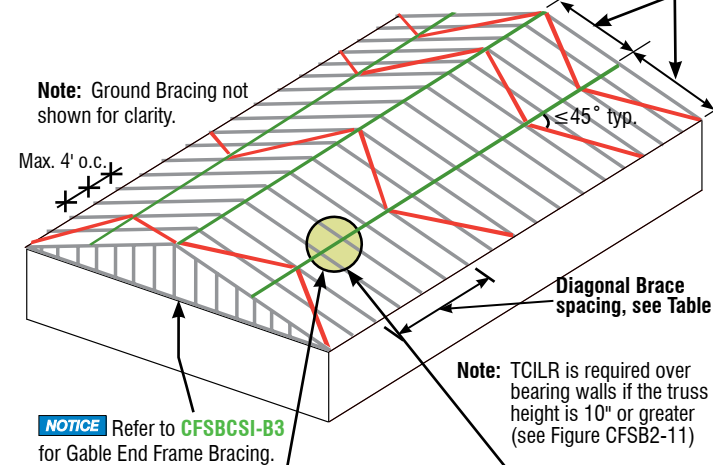


FIGURE CFSB1-24 and CFSB2-37 (4' On-Center)

**Web Member Installation Diagonal Bracing for Trusses Spaced @ 4'-0" On-Center**

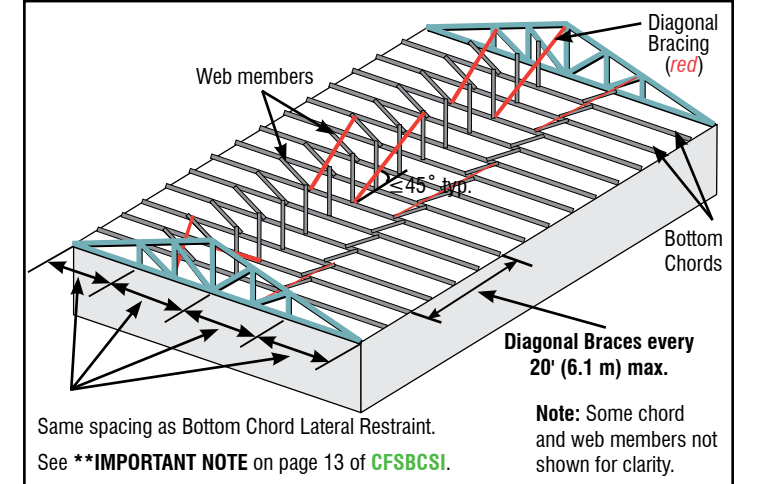


FIGURE CFSB1-27 and CFSB2-35 (4' On-Center)

**Bottom Chord Installation Lateral Restraint and Diagonal Bracing for Trusses Spaced @ 4'-0" On-Center**

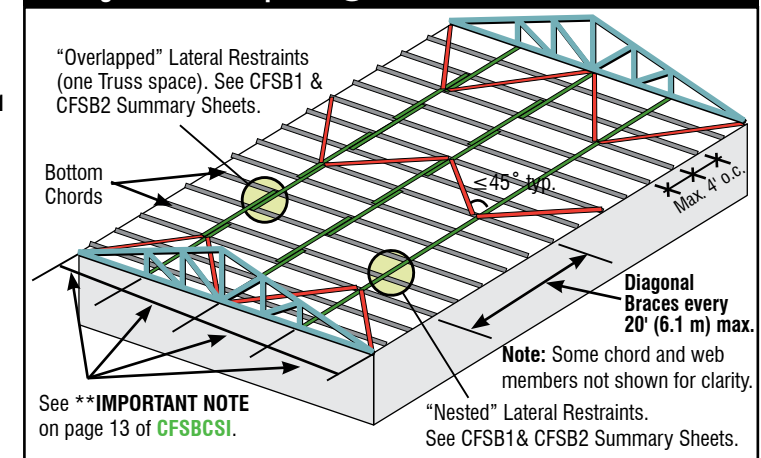


FIGURE CFSB1-28 (4' On-Center)

**PERMANENT RESTRAINT & BRACING OF TRUSSES**

Follow the recommendations provided in Chapters **CFSB3** – *Permanent Restraint/Bracing of Chords & Web Members* of the **CFSBCSI** Booklet EXCEPT:

- ✓ The minimum size steel section used as Permanent Lateral Restraint and Diagonal Bracing is 33 mil 1-1/2" (38 mm) furring (hat) channel (150F125-33) or 33 mil 2-1/2" (64 mm) unpunched stud section (250S162-33) unless specified by the Building Designer. Attach to each truss with #10 self-drilling tapping screws (SDS) with minimum end distance and spacing between screws of 5/8" and minimum edge distance of 3/8" unless otherwise specified. See Tables 2 and 3 below for additional information.

*Sigue las recomendaciones provistas en Capítulo CFSB3 – Restricción/Arriostre Permanente de las Cuerdas y los Miembros Secundarios del CFSBCSI Folleto EXCEPTO:*

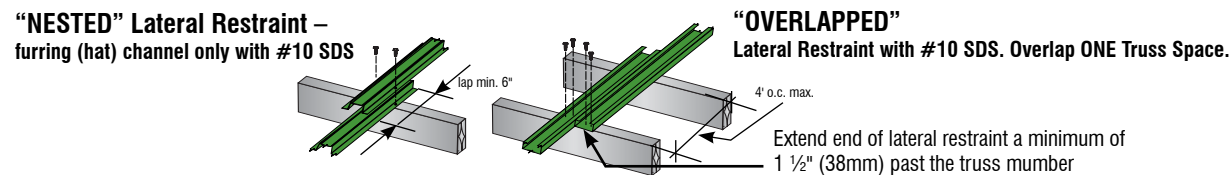
*El tamaño mínimo de la sección de acero utilizado como Restricción Lateral Permanente y Arriostre Diagonal es 33 mil 1-1/2" (38 mm) furring (hat) channel (150F125-33) o sección de tachuela sin perforadora (250S162-33) de 33 mil 2-1/2" (64 mm) a menos que especificado por el Diseñador del Edificio. Sujete a cada truss con #10 tornillos autopercutorantes (SDS) con la mínima distancia de extremo y espaciamiento entre tornillos de 5/8" y la mínima distancia del borde de 3/8" a menos que es especificado otra. Veá las Tablas 2 y 3 abajo para más información.*

Truss Spacing	Lateral Restraint			Diagonal Bracing		
	Minimum Size/Grade <sup>2</sup>	Min. Attachment to Each Truss Chord	Max. Spacing	Minimum Size/Grade <sup>2</sup>	Min. Attachment to Each Truss Chord	Max. Spacing <sup>3,4</sup>
<b>Top Chord</b>						
4 ft (1.2 m)	150F125-33 or 250S162-33	2 - #10 SDS	2 ft (0.6 m) o.c.	350S162-33	5 - #10 SDS	20 ft (6.1 m)
				250S162-33	4 - #10 SDS	16 ft (4.9 m)
				Double <sup>5</sup> 150F125-33	3 - #10 SDS	8 ft (2.4 m)
<b>Bottom Chord</b>						
4 ft (1.2 m)	150F125-33 or 250S162-33	2 - #10 SDS	6 ft (1.8 m) o.c.	250S162-33	3 - #10 SDS	20 ft (6.1 m)
				Double <sup>5</sup> 150F125-33		16 ft (4.9 m)
				150F125-33		8 ft (2.4 m)

<sup>1</sup> Other restraint, bracing and/or attachment requirements may be specified. Table assumes stud sections "S" are unpunched.  
<sup>2</sup> Designations per Steel Stud Manufacturers Association (SSMA).  
<sup>3</sup> Maximum spacing of diagonal bracing for the top chord of a piggyback truss assembly is 8 ft (2.4 m) for trusses spaced at 4 ft (1.2 m) on-center.  
<sup>4</sup> Maximum spacing assumes top chord, bottom chord and web member planes are braced and that bracing extends over and is attached to multiple trusses.  
<sup>5</sup> Double assumes nested 2-piece 150F125-33 attached together with #10 SDS at 12" (300 mm) on-center.

Truss Spacing	Lateral Restraint		Diagonal Bracing <sup>2</sup>		
	Minimum Size/Grade <sup>3</sup>	Min. Attachment to Each Web	Minimum Size/Grade <sup>3</sup>	Min. Attachment to Each Web	Max. Spacing <sup>4</sup>
4 ft (1.2 m)	250S162-33	4 - #10 SDS	250S162-33	5 - #10 SDS	16 ft (4.9 m)
	Double <sup>5</sup> 150F125-33	3 - #10 SDS	Double <sup>5</sup> 150F125-33	4 - #10 SDS	12 ft (3.7 m)
	150F125-33	2 - #10 SDS	150F125-33	3 - #10 SDS	8 ft (2.4 m)

<sup>1</sup> Other restraint, bracing and/or attachment requirements may be specified. Table assumes stud sections "S" are unpunched.  
<sup>2</sup> Assumes either two diagonal braces or one continuous brace from bottom to top chord planes for each row of lateral restraint.  
<sup>3</sup> Designations per Steel Stud Manufacturers Association (SSMA).  
<sup>4</sup> Maximum spacing assumes top chord, bottom chord and web member planes are braced and that bracing extends over and is attached to multiple trusses.  
<sup>5</sup> Double assumes nested 2-piece 150F125-33 attached together with #10 SDS at 12" (300 mm) on-center.



**NOTICE** The lateral restraint and diagonal bracing provided in Tables 2 and 3 above are intended to resist truss member buckling due to internal truss forces and does not constitute the required diaphragm stiffness or resistance against lateral loads such as wind and/or seismic.

*La restricción lateral y el arriostre diagonal mostrado en las Tablas 2 y 3 arriba son pensados para resistir el torcer de los miembros del truss por las fuerzas internas del truss y no constituyen la requerida rigidez del diafragma o resistencia contra las cargas laterales como por viento y/o cargas sísmicas.*

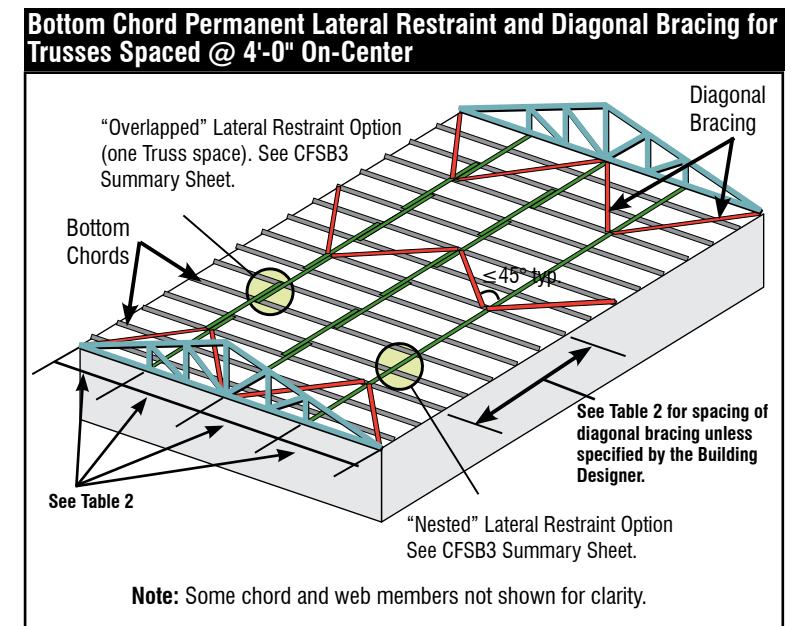


FIGURE CFSB3-7 (4' On-Center)

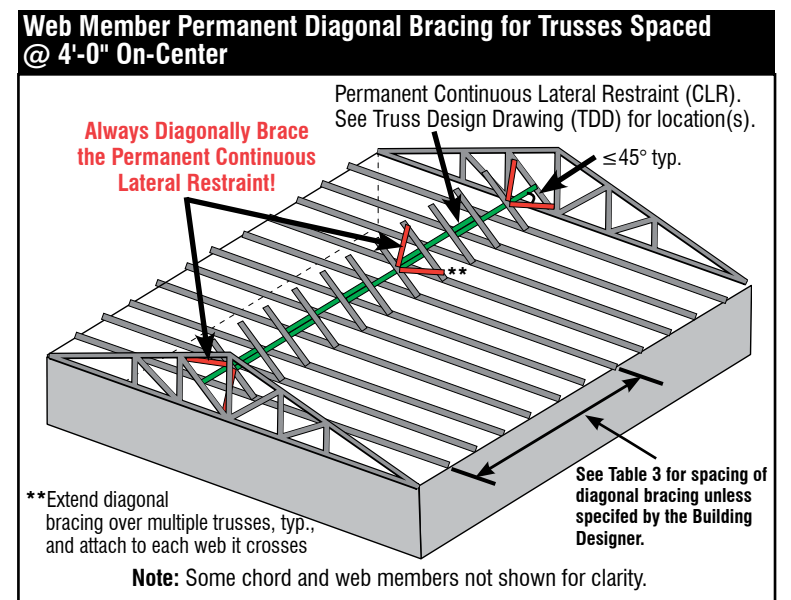


FIGURE CFSB3-11 (4' On-Center)

- ✓ Attach the CLR at the locations shown on the TDD. *Sujete el CLR en las ubicaciones mostrados en el TDD.*
- ✓ Install the diagonal bracing at less-than-or-equal-to 45° to the CLR and position so that it crosses the web within 6" of the CLR. Attach the diagonal bracing as close to the top and bottom chords as possible and to each web it crosses. Extend bracing over multiple trusses, typ. and extend ends of bracing past truss member at least 1 1/2" (38mm). **Repeat at spacing provided in Table 3, previous page, or as specified by the Building Designer.**

*Instale el arriostre diagonal a menos de o igual a 45 grados al CLR y lo coloque para que cruce la cuerda dentro de 6" del CLR. Sujete el arriostre diagonal tan cercano a las cuerdas superiores e inferiores como sea posible y a cada cuerda que lo cruza. Extiende el arriostre sobre multiples trusses, y extiende los extremos del arriostre más allá del miembro del truss por lo menos 1 1/2" (38mm). Repita al espaciamiento mostrado en la Tabla 3 de la pagina previa o como especificado por el Diseñador del Edificio.*