

CAPITOL TRUSS, INC.

E-Z TRIM

STRONG, FAST & SILENT FLOOR SYSTEMS

16" DEEP TRIMMABLE END
OPEN WEB FLOOR TRUSSES

TECHNICAL GUIDE



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7/17/09

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E-Z TRIM PRODUCT OVERVIEW

General Notes:

Our **E-Z TRIM** trusses:

- guarantee a *perfect fit* every time.
- have an *open web design* which allows for the passage of *A/C ductwork, plumbing & electrical wiring*.
- can be trimmed *up to 12"* on per trimmable end.
- have **3-1/2"** wide nailing surfaces to guarantee a *SQUEAK FREE* floor (when properly installed).
- have *camber* built in to offset for dead load deflection. The amount of camber is based on span.
- have been *engineered and sealed*. Sealed truss drawings are available for submittals. Contact your supplier.
- have *"TOP"* clearly stamped on the ends of each truss for proper orientation.
- are built with **2x4 Southern Yellow Pine** kiln dried to 19% or less moisture content.
- are part of our company wide *quality control program* administered by Timber Products Inspection Inc.
- are **NON TREATED** – Use in dry service conditions only.
- are designed to *exceed* minimum code requirements. See span tables.
- come in a *Heavy Duty –Multi use "Z" series* & an *Economical Standard duty "X" series*.
- can be custom designed fabricated for special situations.

Caution: Improper permanent or temporary bracing could cause *property damage, serious personal injury or death*. Follow all bracing instructions detailed herein & follow handling, erection & bracing guidelines detailed in BCSI publications.

Contact **Capitol Truss** for any conditions deviating from those in this Technical Guide.

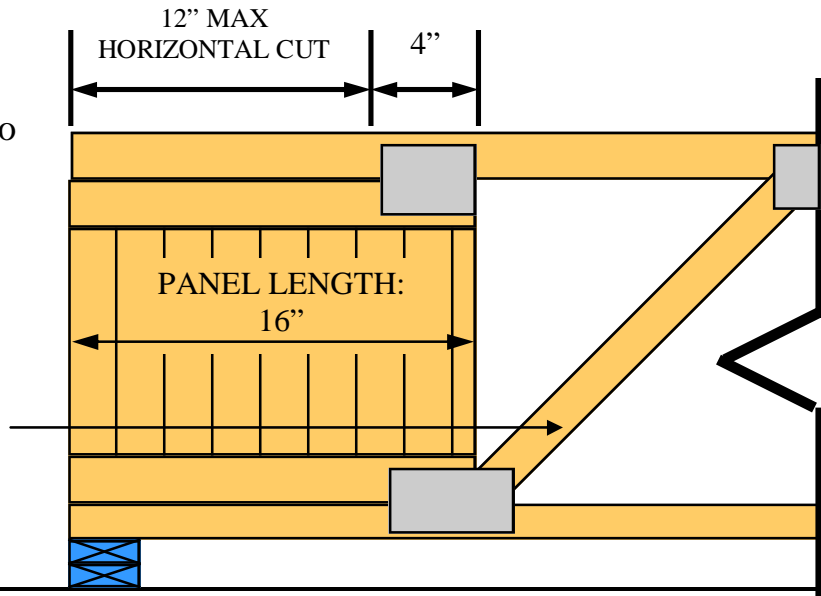
TRIMMABLE AREA:

Trim as needed up to 12 inches. Do Not cut or remove any portion of truss plates.

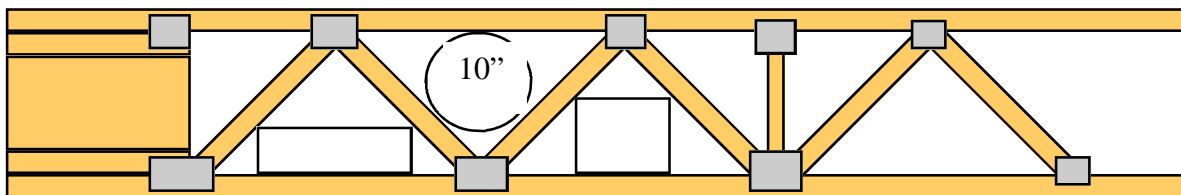
ORIENTATION:

Note that diagonal web always points down toward bearing. "TOP" will be stamped on top of truss.

Detail 7



OPENING SIZES:



SQUARE CLEARANCES:

- 6"x12"
- 7"x10"
- 8"x8"

SEE SPAN CHARTS FOR CENTER A/C CHASE OPENING SIZES (Pages 3 & 4).

Detail 6

Z" SERIES SPAN TABLES: Heavy Duty

TABLE 1 – 40# LIVE LOAD

Z SERIES - RESIDENTIAL 40# PSF TOP CHORD LIVE LOAD 40 - 10 - 0 - 5 = 55 PSF TOTAL LOAD							
LIVE LOAD DEFLECTION							
TRUSS	SPAN	L/? - INCHES 24" SPACING	L/? - INCHES 19.2" SPACING	L/? - INCHES 16" SPACING	L/? - INCHES 12" SPACING	GRADE	CHASE +/- 1/4"
Z3	3'-0"	999 - .00"				2 / 2	1'-5"
Z4	4'-0"	999 - .00"				2 / 2	2'-0"
Z5	5'-0"	999 - .04"				2 / 2	2'-0"
Z6	6'-0"	999 - .01"				2 / 2	2'-0"
Z7	7'-0"	999 - .02"				2 / 2	2'-0"
Z8	8'-0"	999 - .06"				2 / 2	2'-0"
Z9	9'-0"	999 - .05"				2 / 2	2'-0"
Z10	10'-0"	886 - .10"				2 / 2	2'-0"
Z11	11'-0"	999 - .08"				2 / 2	2'-0"
Z12	12'-0"	976 - .10"				2 / 2	2'-0"
Z14	14'-0"	999 - .10"				2 / 2	2'-0"
Z16	16'-0"	999 - .10"				2 / 2	2'-0"
Z18	18'-0"	999 - .15"				2 / 2	2'-0"
Z20	20'-0"	996 - .23"				2 / 2	1'-10"
Z22	22'-0"	773 - .33"				2 / 2 - 2100	2'-0"
Z24	24'-0"	583 - .48"	730 - .38"			2 / 1	2'-0"
Z26	26'-0"		567 - .54"	681 - .45"		2 / 1 - 2	2'-0"
Z28	28'-0"			551 - .60"	735 - .45"	2 / 2 - 2100-2	2'-0"

"Z" SERIES:

- Large Center Chase
- Multi Use
- Heavy duty

Depth: 16"

Construction:
2x4 SYP material.

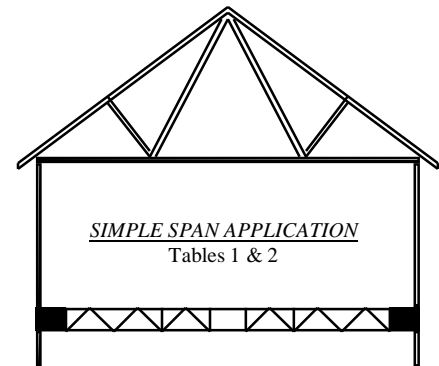
Trimable Area:
-Z SERIES trusses are trimmable up to 2'-0" (1'-0" on *each end*)

Chase Openings:
Chase opening sizes are shown Table 1 & 4, right hand column.

Z SERIES - 50# PSF TOP CHORD LIVE LOAD 50 - 10 - 0 - 5 = 65 PSF TOTAL LOAD							
TABLE 2 LIVE LOAD DEFLECTION							
TRUSS	SPAN	L/? - INCHES 24" SPACING	L/? - INCHES 19.2" SPACING	L/? - INCHES 16" SPACING	L/? - INCHES 12" SPACING		
Z3	3'-0"	999 - .00"					
Z4	4'-0"	999 - .01"					
Z5	5'-0"	999 - .05"					
Z6	6'-0"	999 - .01"					
Z7	7'-0"	999 - .03"					
Z8	8'-0"	999 - .07"					
Z9	9'-0"	999 - .06"					
Z10	10'-0"	999 - .11"					
Z11	11'-0"	999 - .10"					
Z12	12'-0"	999 - .13"					
Z14	14'-0"	999 - .12"					
Z16	16'-0"	999 - .13"					
Z18	18'-0"	999 - .19"					
Z20	20'-0"	796 - .29"					
Z22	22'-0"	773 - .33"					
Z24	24'-0"		584 - .48"				
Z26	26'-0"			544 - .56"			
Z28	28'-0"			450 - .73"	577 - .57"		

50# LIVE LOAD: "Z" SERIES

Table 2



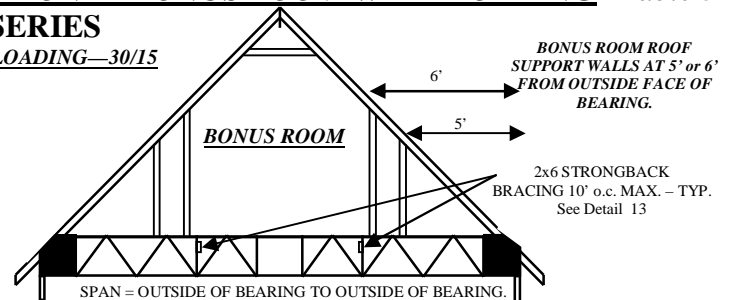
SPAN = OUTSIDE OF BEARING TO OUTSIDE OF BEARING.

Z SERIES - RESIDENTIAL 40# PSF TOP CHORD LIVE LOAD WITH BONUS ROOM ROOF LOADING 40 - 10 - 0 - 5 = 55 PSF TOTAL LOAD							
TABLE 3 LIVE LOAD DEFLECTION							
TRUSS	SPAN	L/? - INCHES 24" SPACING	L/? - INCHES 19.2" SPACING	L/? - INCHES 16" SPACING	L/? - INCHES 12" SPACING		
Z20	20'-0"		953 - .24"				
Z22	22'-0"		752 - .34"				
Z24	24'-0"		575 - .49"				
Z26	26'-0"			541 - .56"			
Z28	28'-0"				581 - .57"		

ADDITIONAL BONUS ROOM WALL LOADING Table 3

"Z" SERIES

ROOF LOADING—30/15



"X" SERIES SPAN TABLE: Economy

ABLE 4

"X" SERIES - 16" TRIMMABLE END FLOOR TRUSS SPAN TABLES - SIMPLE SPANS

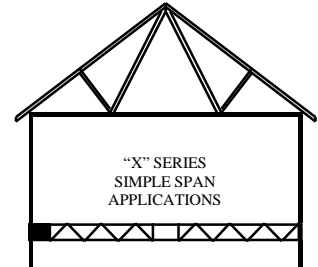
"X" SERIES - RESIDENTIAL 40# PSF TOP CHORD LIVE LOAD		40 - 10 - 0 - 5 = 55 PSF TOTAL LOAD				CHORD	CHASE
		LIVE LOAD DEFLECTION					
TRUSS		L/? - INCHES	L/? - INCHES	L/? - INCHES	L/? - INCHES	GRADE	+/- 1/4"
MODEL	SPAN	24" SPACING	19.2" SPACING	16" SPACING	12" SPACING		
X3	3'-0"	999 -.00"				2 / 2	1'-5"
X4	4'-0"	999 -.00"				2 / 2	2'-0"
X5	5'-0"	999 -.03"				2 / 2	2'-0"
X6	6'-0"	999 -.01"				2 / 2	1'-8"
X7	7'-0"	999 -.02"				2 / 2	1'-5"
X8	8'-0"	999 -.04"				2 / 2	2'-5"
X9	9'-0"	999 -.03"				2 / 2	2'-2"
X10	10'-0"	999 -.06"				2 / 2	1'-11"
X11	11'-0"	999 -.05"				2 / 2	1'-8"
X12	12'-0"	999 -.07"				2 / 2	1'-5"
X13	13'-0"	999 -.05"				2 / 2	1'-2"
X14	14'-0"	999 -.08"				2 / 2	0'-11"
X15	15'-0"	999 -.15"				2 / 2	1'-11"
X16	16'-0"	999 -.12"				2 / 2	1'-8"
X17	17'-0"	999 -.16"				2 / 2	1'-5"
X18	18'-0"	969 -.22"				2 / 2	1'-2"
X19	19'-0"	.873 -.25"				2 / 2	0'-11"
X20	20'-0"	757 -.31"				2 / 2	0'-8"
X21	21'-0"	X		999 -.24"		2 / 2	0'-5"
X22	22'-0"	X		860 -.30"		2 / 2	1'-5"
X23	23'-0"	X		778 -.36"		2 / 2	1'-2"
X24	24'-0"	X		669 -.42"		2 / 2	0'-11"
X25	25'-0"	X		595 -.49"		2 / 2	0'-8"
X26	26'-0"	X		540 -.56"		2 / 2	0'-5"
X27							
X28	28'-0"	** TWO TRIMMABLE ENDS**		X	706 -.47"	2 / 2	0'-1"

40# LIVE LOAD:

"X" Series

Our Economy line of floor trusses

- Trimmable up to 1'-0"
- No standard chase size or location
- No additional loading



SPAN = Outside of bearing
to Outside of bearing

NOTES - For all span tables: Never install UPSIDE DOWN – "TOP" marked on all truss ends.

- Use 3/4" span rated subfloor that is both glued and nailed(screwed).
- 2x6 Strongback Bracing at 10'-0" o.c. maximum is required (see *Detail 13*).
- 1 3/4" minimum bearing width required (except as noted – see *Table 5*).
- Trusses with **TOTAL LOAD** deflections greater than 3/4" are shown in **BOLD**.
- Use web stiffeners at any truss end supported by a truss hanger if the hanger does not provide support for the top chord of the truss.
- Trusses are not evaluated for vibration. Vibration can be reduced by proper 2x6 strongback installation and direct applied diaphragm ceiling.
- Refer to BCSI (produced by WTCA & TPI) for information on the correct handling, erection & temporary bracing of trusses.

Contact *Capitol Truss staff (334-567-9295)* for questions concerning any load condition not shown above.

DO's & DON'Ts

WHEN FRAMING WITH *E-Z TRIM* TRUSSES

DO:

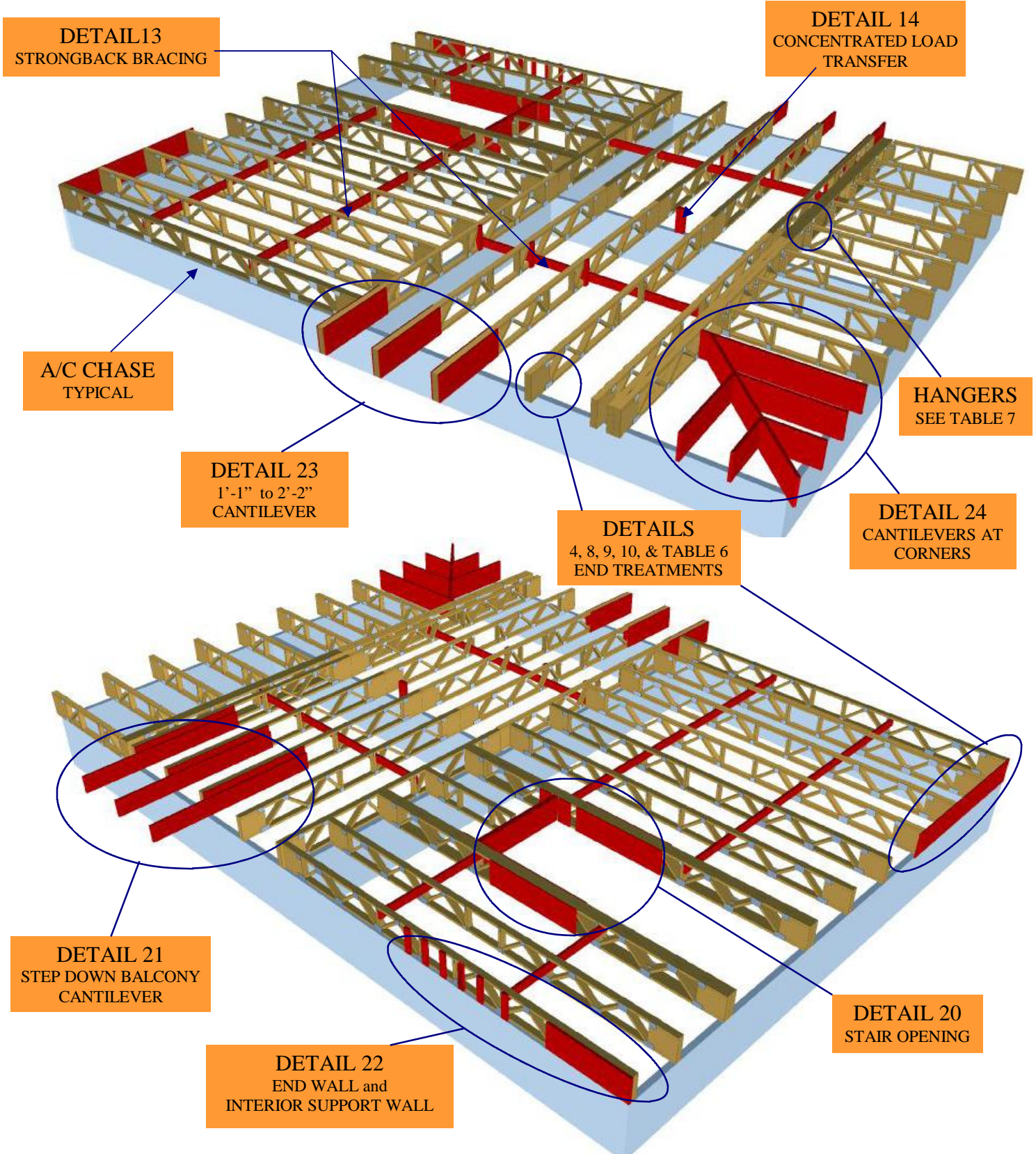
- Brace trusses for rollover prior to allowing anyone on trusses. *See Details 8, 9 & 10 and BCSI-B7.*
- Brace trusses properly before proceeding with construction. *See BCSI-B7*
- Handle properly. *See BCSI-B7*
- Use permanent 2x6 strongback bracing installed at 10'-0" o.c. max. *See Detail 13.*
- Provide proper bearing width (min. 1 3/4" except as noted).
- Use 3/4" rated subfloor that is both glued & nailed (or screwed).
- Use web stiffeners at any truss end supported by a hanger if the hanger does not provide support for the top chord of the truss.
- Install with "TOP" stamp up. Diagonal webs closest to bearings will always point down toward bearing wall.
- Keep dry.
- Nail to bearing with two (2) 16d nails on each side spaced 1-1/2" from truss end.
- Minimize vibration by properly installing 2x6 strongbacks and direct applied diaphragm ceiling.
- Consider using Roof Trusses to transfer roof load thru exterior load bearing walls.
- Consider using 16" spacing in tile floor areas. Consult tile supplier for their requirements.
- Refer to *Table 6* for proper end closures due to Vertical Load Transfer at bearings.
- See *Details 4, 19, 21, & 23* for proper cantilever framing & cantilever limits.
- Brace roof framing on load bearing walls only.
- Transfer concentrated loads to foundation properly. *See Detail 14 & Table 6.*
- Coordinate truss layout with plumbing drains & A/C locations.
- Consult [Capitol Truss](tel:877-567-9295) (877-567-9295) for any conditions or applications not discussed in this Technical Guide.

DON'T:

- Cut, Drill, Notch or Remove any portion of any truss chord, web or connector plate except as specified herein. *See Details 1, 2 & 3.*
- Top chord bear any truss. All trusses must bear on bottom chord.
- Install truss upside down. Install with "TOP" up.
- Cut or Drill Holes in trim truss panel. *See Detail 1.*
- Use as a beam or header except as shown herein. *See Details 20 & 24.*
- Handle improperly – *See BCSI-B7.*
- Use in *wet* service conditions or install in contact with concrete or masonry construction. Keep dry.
- Make rafter cuts more than 12" horizontally (or beyond edge of connector plates). *See Detail 5.*
- Cut heels lower than 4-1/2" when making rafter cuts. *See Detail 5.*
- **Overload small groups or individual trusses (i.e. units of plywood, lumber or drywall).
Stack over beams or walls instead.**
- **Allow workers on top of unbraced trusses.**

Note: Should trusses become damaged, cut or installed incorrectly call [Capitol Truss](tel:877-567-9295) immediately at: 877-567-9295.

E-Z TRIM TYPICAL LAYOUT (OPPOSITE VIEWS)



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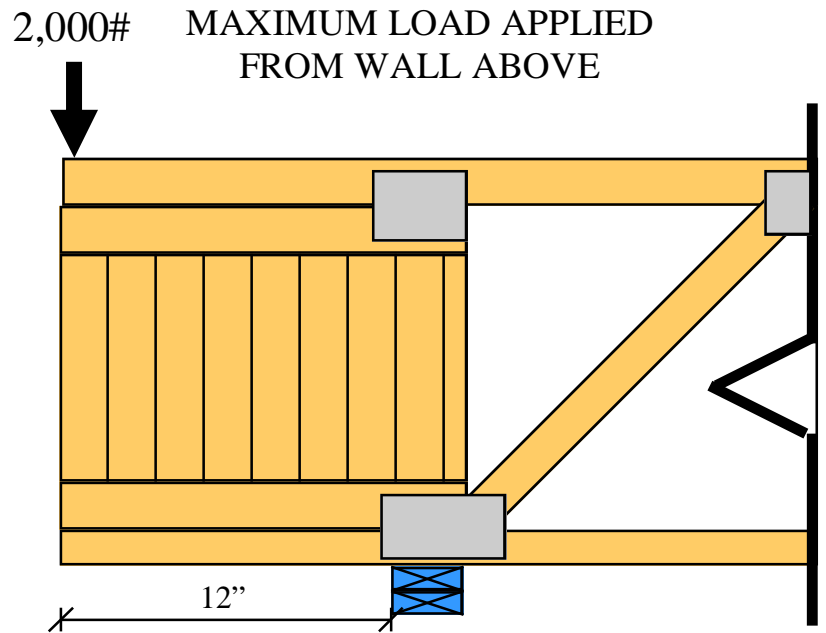
TYPICAL CANTILEVER

Engineering required in applications exceeding the following:

Maximum Cantilever: 12"

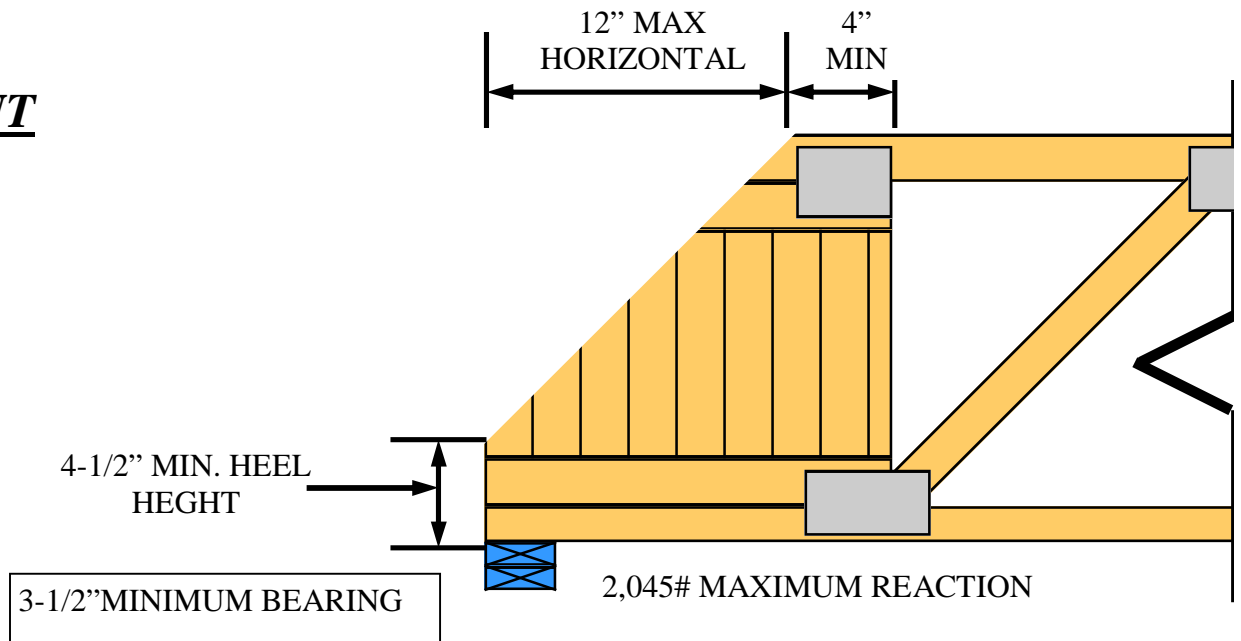
Maximum Point Load: 2,000#

Detail 4

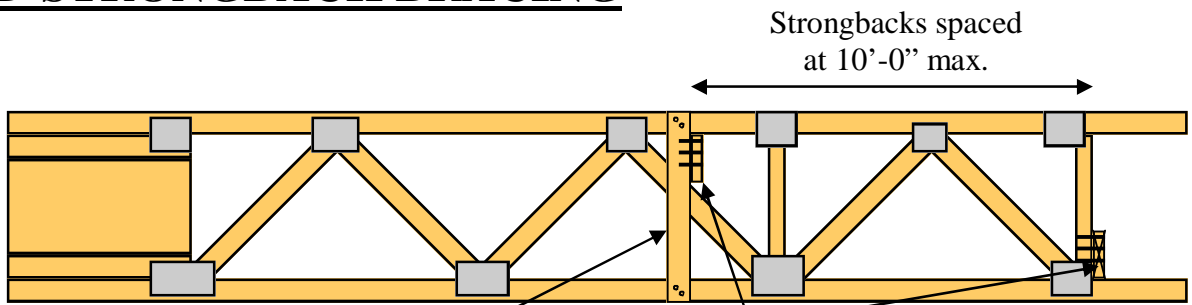


PROPER RAFTER CUT

Detail 5



REQUIRED STRONGBACK BRACING



Detail 13

Field installed 2x4 vertical block. (2) 10d nails @ top & bottom.

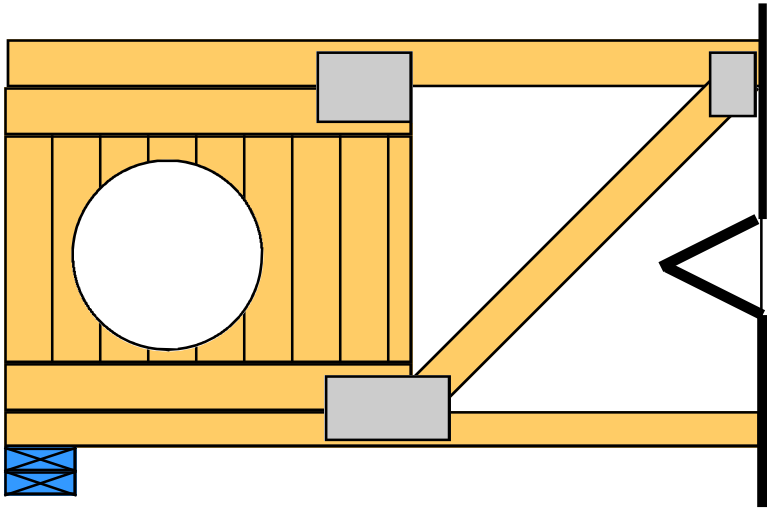
2x6 (min) strongbacks restrained at each end. Secure w/(3) 16d nails @ each vertical. Locate as close to bottom chord as possible. Strongbacks spaced at 10'-0" max.

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DO's & DON'Ts DETAILED

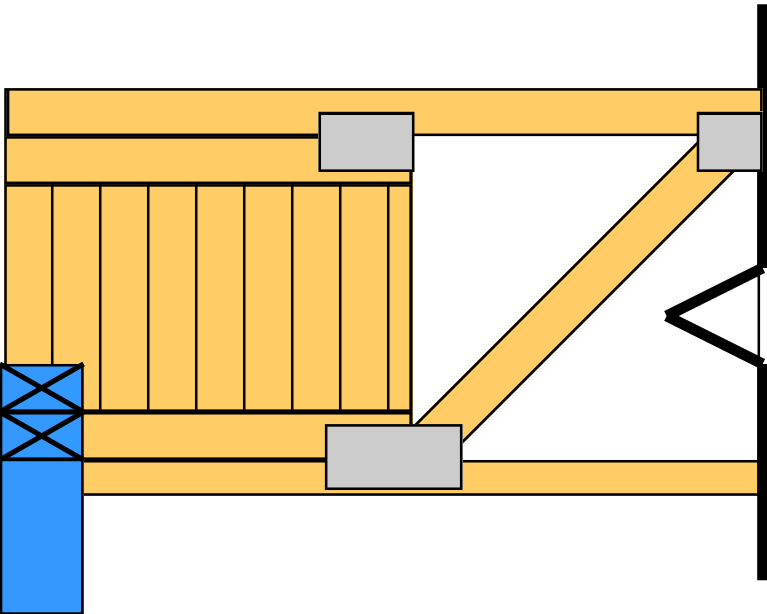
DON'T
CUT or DRILL
HOLES IN
PANEL!

Detail 1



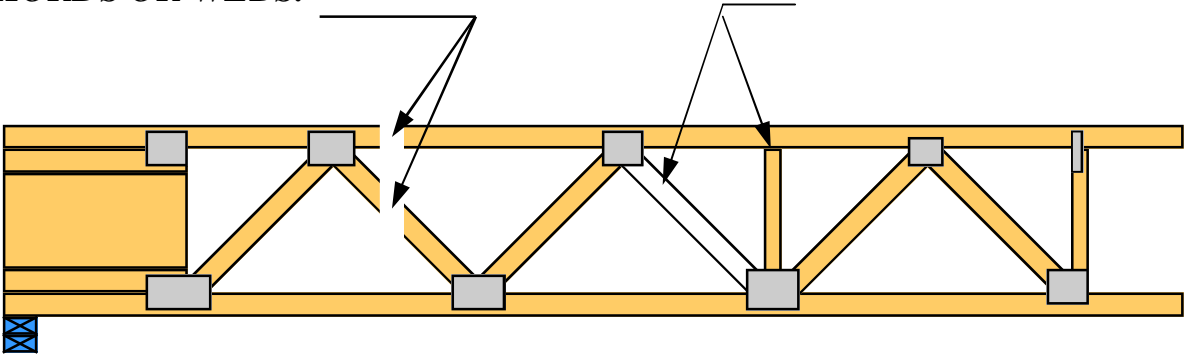
DON'T
NOTCH PANEL!

Detail 2



DON'T: CUT,
NOTCH OR DRILL
CHORDS OR WEBS.

DON'T: REMOVE
WEBS OR PLATES.



Detail 3

METHODS OF TRANSFERRING VERTICAL LOADS:

NO REINFORCEMENT

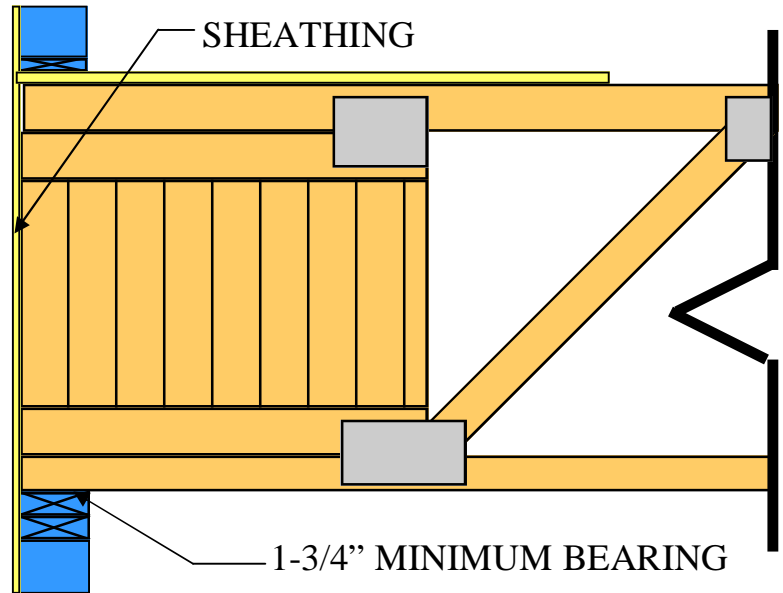
In many cases no reinforcement is necessary. Maximum allowable load transfer with no reinforcement is the difference between the maximum allowable reaction (Table 5) and actual truss reaction.

Example: Refer to Table 5 & Table 8 for reactions.

3-1/2" - truss = max transfer with
bearing reaction no reinforcement
or

3,000# - 1,000# = 2,000# max transfer
estimated with no reinforcement

DETAIL 8



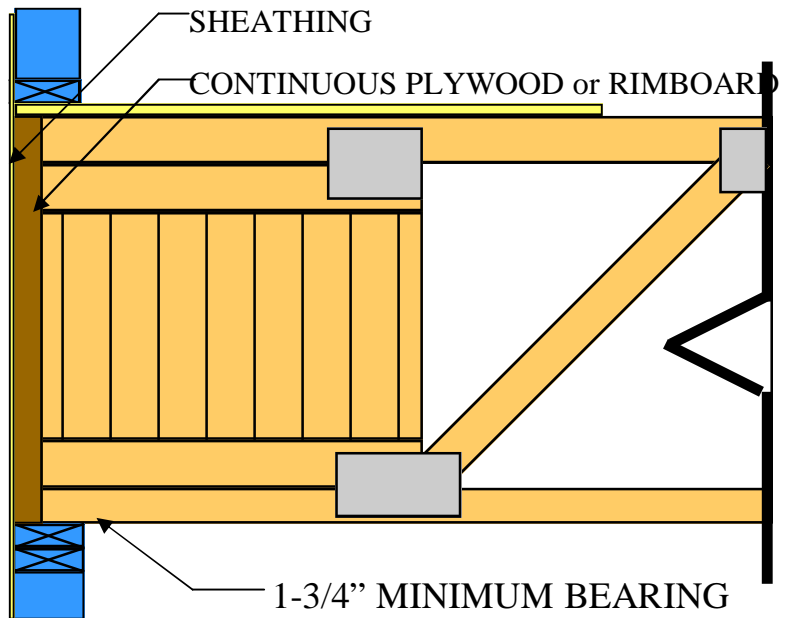
PLYWOOD OR RIMBOARD BANDING

MAXIMUM LOAD APPLIED FROM ABOVE:
500# plf to 4,400# plf

DEPENDING ON SIZE

See Table 6

Detail 9



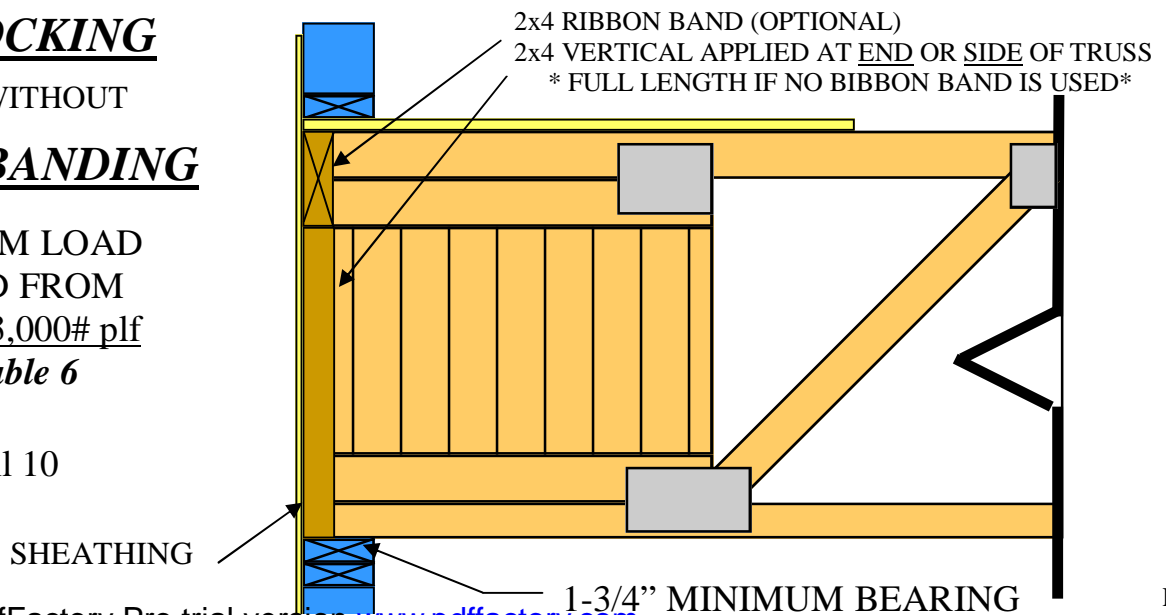
2x4 BLOCKING

WITH or WITHOUT

RIBBON BANDING

MAXIMUM LOAD APPLIED FROM ABOVE: 3,000# plf
See Table 6

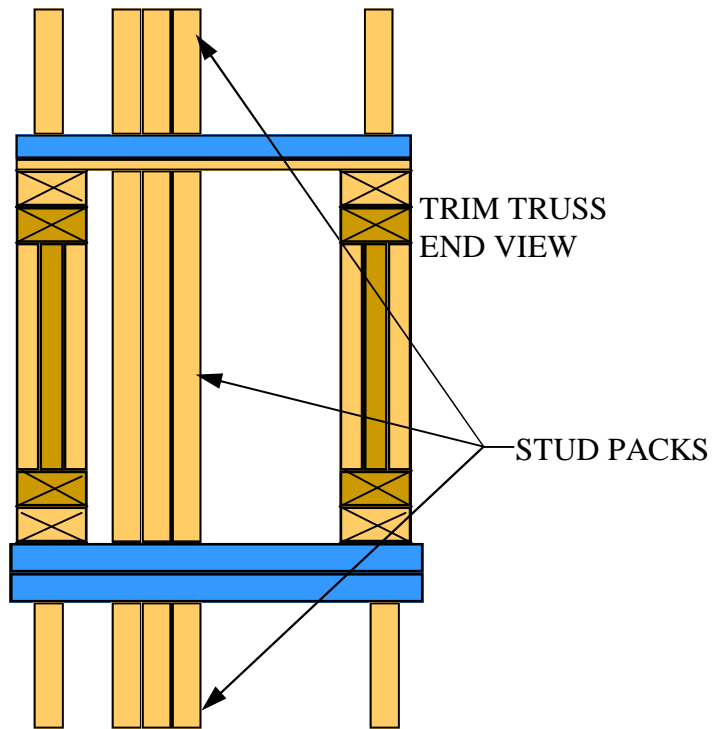
Detail 10



**PROPER CONCENTRATED
LOAD TRANSFER:**

Use stud packs to transfer load continuously from concentrated load above floor system to foundation.
Number & size of studs to be determined by building designer.

TRIM TRUSS
END VIEW



Detail 14

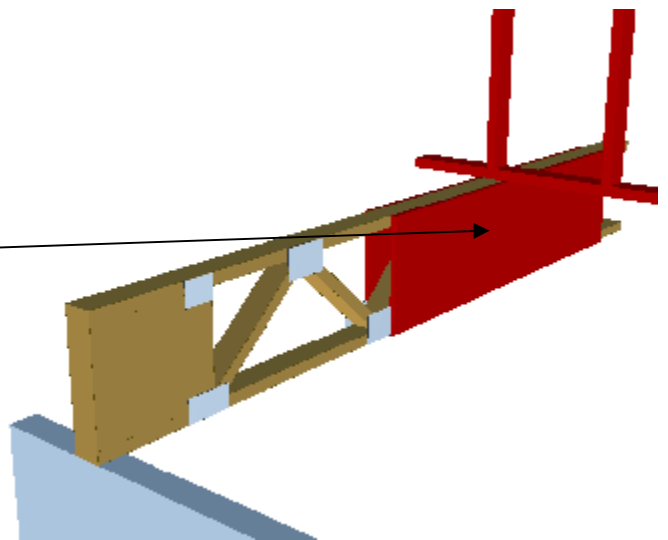
**REINFORCEMENT FOR LOADBEARING
WALL or CONCENTRATED LOADS:**

****Engineering required****

Job specific truss drawings will detail reinforcement.

For typical bonus room applications reinforcement may not be required. See *Table 3*.

Detail 18

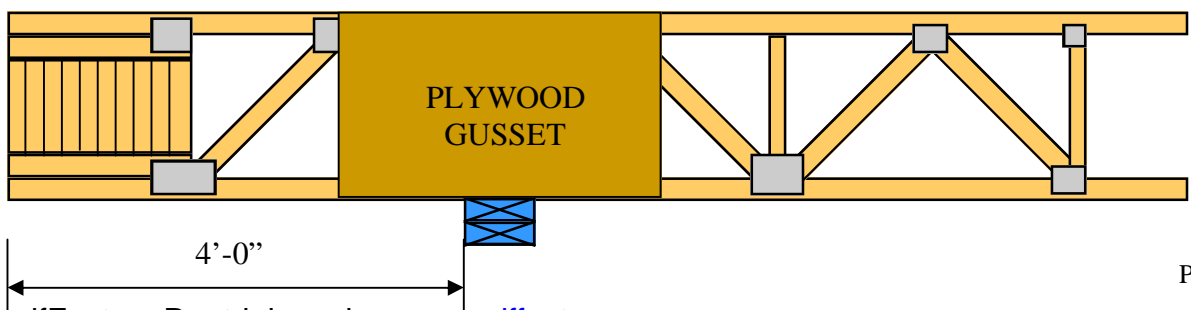


4' -0" CANTILEVER (INTERIOR BALCONY):

Maximum Cantilever using this detail: 4' - 0"

Uniform Floor load only - No added loading.

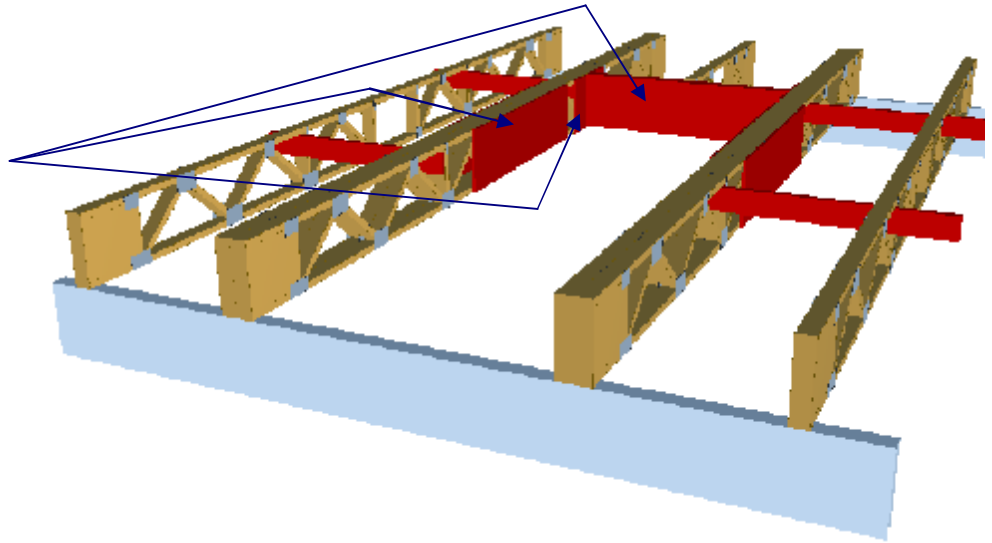
Attach 36" x 16" x 3/4" plywood gusset to each face using structural wood adhesive and 10d nails @ 6" o/c into top & bottom chords. Gussets must have full contact with bearing support. **Minimum overall truss span is 12' - 0"**.



STAIR OPENING:

****Engineering required****

Job specific truss drawings will detail connections required for Multi-ply truss, plywood gussets, headers & hangers.

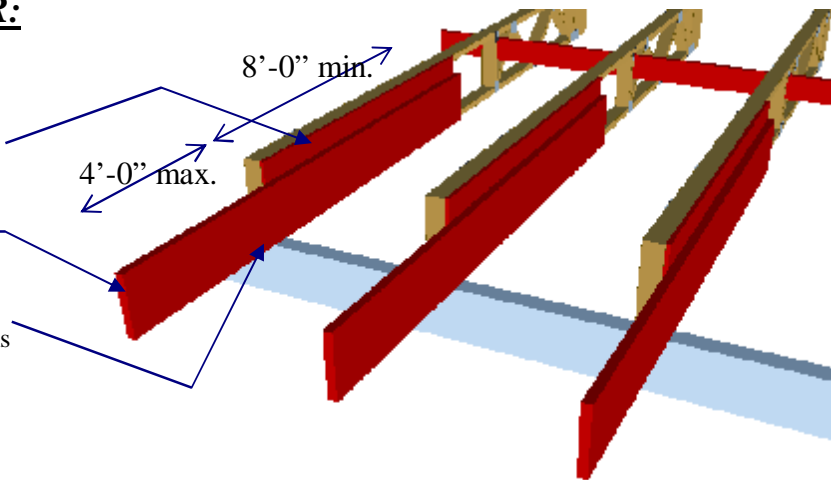


DETAIL 20

STEP DOWN BALCONY CANTILEVER:

Uniform floor loads only.

- Attach 8'-0" x 16" x 3/4" plywood gusset to one face of the truss using structural wood adhesive & 10d nails spaced 6" o/c into top & bottom chords.
- Attach 12'-0" joist (**2x8 or larger SP#2 min.**) to plywood gusset using 3 rows of 10d nails spaced 6" o.c.
- Maximum cantilever is 4'-0".
- Ensure 2x cantilever has solid bearing contact—USE blocks or shims if required.
- Minimum truss span - 8'-0"

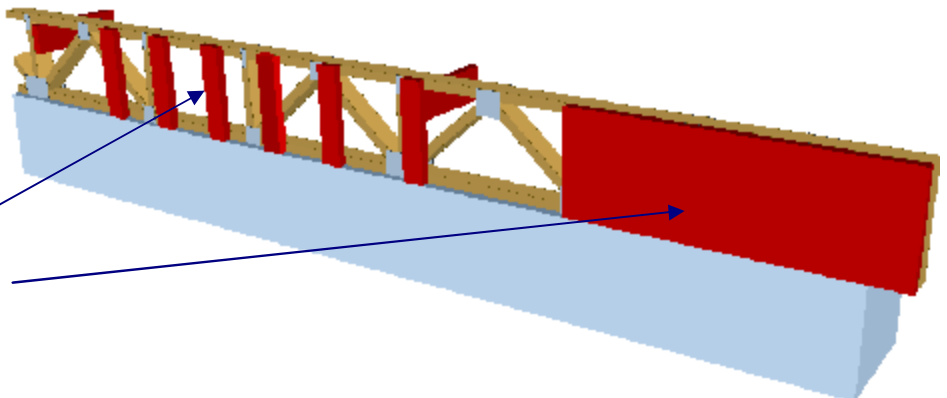


DETAIL 21

END WALLS & INTERIOR SUPPORT WALLS:

3 METHODS TO PROPERLY SUPPORT END WALLS OR INTERIOR SUPPORT WALLS:

1. 2X Vertical blocks applied to face of truss flush with edge of wall.
2. Rimboard applied to face of truss flush with edge of wall.
3. Pre-built or site framed "Knee Wall" the same depth as truss.



DETAIL 22

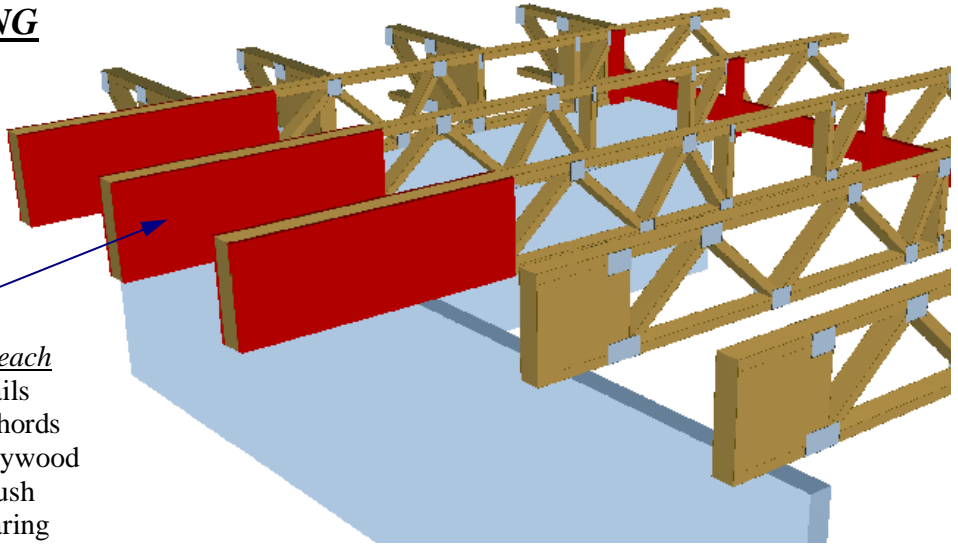
2'-0" (MAX) LOAD BEARING
CANTILEVER:

LIMITS:

- 2,000# Maximum point load
- 2'-0" Maximum cantilever distance from edge of load bearing support.
- Minimum Truss Length—12'-0"
- Maximum Truss Spacing—24" o/c

Modifications required:

3/4" plywood gussets (16"x48") added to each face of truss. Attach with 10d common nails spaced 6" o/c into all covered members (chords & webs) and structural wood adhesive. Plywood gussets must be continuous (one piece), flush with end of truss & must be flush with bearing support.



DETAIL 23

CANTILEVERS AT CORNERS
OF BUILDING:

Typically seen when cantilevering over brick.

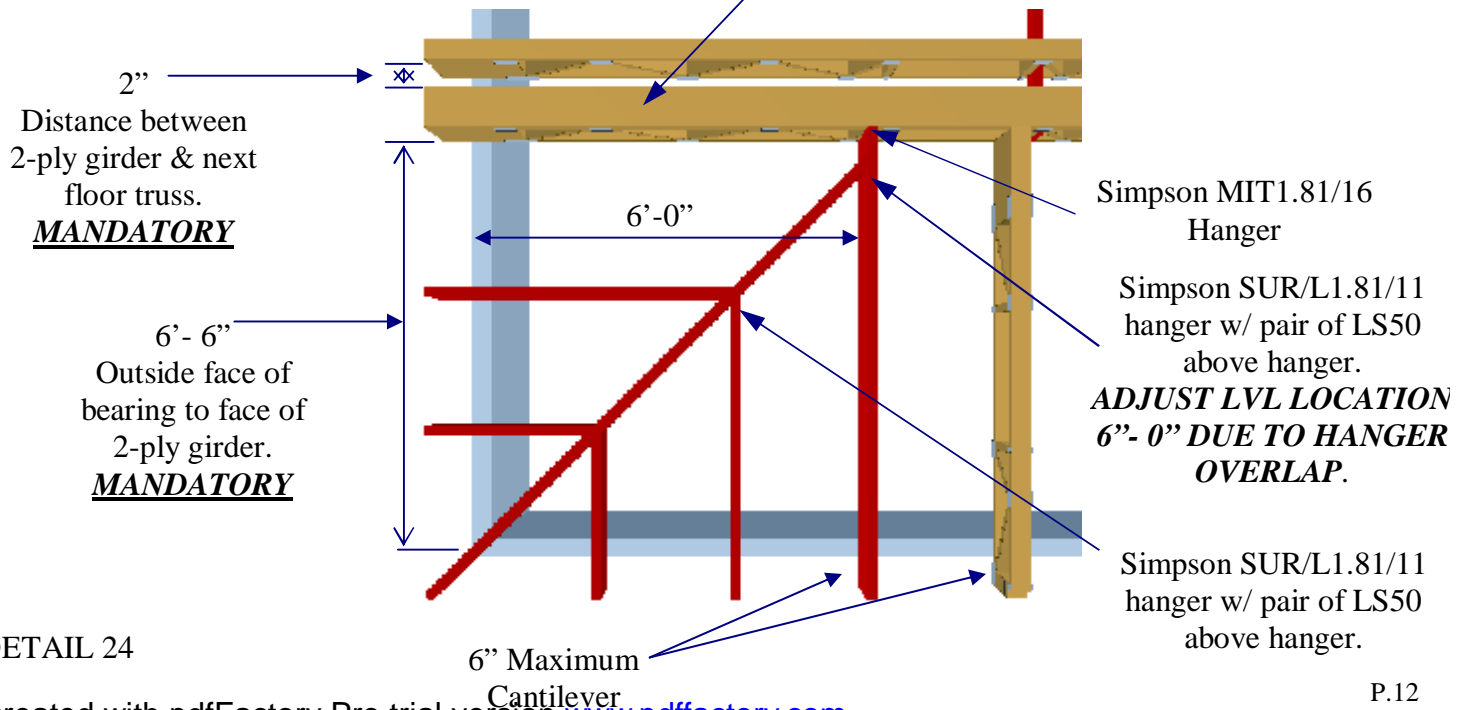
Hip set material—1 ply 16" LVL

MANDATORY Girder Setback— 6'- 6"

MANDATORY – 2" distance between 2-ply girder & adjacent floor truss.

2-PLY GIRDER CONNECTIONS:

- Connect plies with Simpson SDS 1/4x6 or USP WS6 wood screws installed in top chord only, spaced 16" o/c maximum.
- Anchor each end of 2-ply girder truss to wall with pair of Simpson H2.5A connectors installed diagonally across from each other.



DETAIL 24

E-Z TRIM MAXIMUM REACTION BY BEARING SIZE: Table 5

Reactions below are for trusses only. No end closure is required for the following reactions. For trusses with rafter cuts see *Detail 5*.

BEARING WIDTH:	MAXIMUM REACTION:
1-3/4"	2,000 lbs
3-1/2"	3,000 lbs
5-1/2"	4,500 lbs

E-Z TRIM VERTICAL LOAD TRANSFER AT BEARINGS: Table 6

The load transfers below are in addition to the truss reaction loads. **E-Z TRIM** trusses will not require special end closure treatment in many applications. However, the building designer may specify an end closure for other reasons. Contact Capitol Truss with questions regarding load transfer.

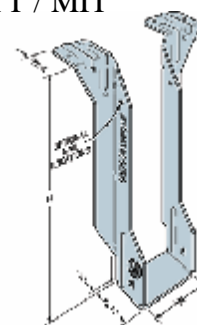
Maximum Vertical Load Transfer from wall above.	End Closure (or Reinforcement at Interior Bearings) Based on APA specs for Rimboard & plywood.
500 plf	7/16" APA rated structural panel (OSB or plywood)
1,000 plf	3/4" APA rated structural panel (OSB or plywood)
1,333 plf	1" APA rated structural panel (OSB or plywood)
1,600 plf	7/8" APA STURD-I-FLOOR
2,000 plf	2 layers of 3/4" APA rated structural panel (OSB or plywood)
3,000 plf	2x4 squash block
3,300 plf	1" APA rim board
4'400 plf	1-1/8" APA rim board

TYPICAL SIMPSON HANGERS: Table 7

Remember – 1) Always fill all nail holes. 2) Install web stiffeners when top chord of truss is **not** supported. Refer to Simpson Catalog for nailing requirements, max. uplift, max. loads, other useable hangers, etc. Simpson Technical Support phone #: 800-999-5099, web site – www.strongtie.com.

TRUSS WIDTH	HANGER MODEL	MOUNTING TYPE	NAILS	
			Header	Joist
2-1/2"	ITT316	TOP	10d	10d x 1-1/2"
	MIT316	TOP	16d	10d x 1-1/2"
	IUT316	FACE	10d	10d x 1-1/2"
	SUR/L2.56/14	SKEWED	16d	10d x 1-1/2"
3-1/2"	ITT416	TOP	10d	10d x 1-1/2"
	MIT416	TOP	16d	10d x 1-1/2"
	IUT416	FACE	10d	10d x 1-1/2"
	THA422	ADJUSTABLE	See Simpson Catalog	
	SUR/L414	SKEWED	16d	16d
	THAR/L422	SKEWED ADJUSTABLE	See Simpson Catalog	
5-0" (double 2-1/2")	MIT5.12/16	TOP	16d	10d x 1-1/2"
7-0"(double 3-1/2")	HU812	FACE	16d	16d
	WPI416-2 (welded)	TOP	16d	10d x 1-1/2"

ITT / MIT



THA



TABLE 8
MAXIMUM TRUSS REACTIONS (Lbs):

Table shows reaction of trusses with maximum floor loading applied.
 See span tables for applied loads & spacing.

<u>LENGTH</u>	<u>X SERIES</u>	<u>Z SERIES</u>
6'	677	440
7'	423	502
8'	471	557
9'	545	643
10'	591	696
11'	565	773
12'	711	840
13'	770	-
14'	825	907
15'	879	-
16'	941	1037
17'	997	-
18'	1055	1167
19'	1113	-
20'	1171	1297
21'	819	-
22'	858	1429
23'	897	-
24'	935	1475
25'	975	-
26'	1014	1331
28'	769	1230

Please contact [Capitol Truss](#) for assistance with any application or condition not clearly covered by this guide.

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