For more information, view our website on Site Built Construction at http://www.ufpi.com/product/tjwp.htm

Site Built Technical Manual

Innovative Products for Today's Builders.

Universal Forest Products®

Use Our Strengths to Your Advantage

The nation's leading manufacturer and distributor of engineered wood components.

As the nation's leading manufacturer and distributor of engineered wood components, Universal Forest Products is creating a seamless, single-source supply network for the site-built industry. That network, combined with more than 50 years of experience in building components, provides you with high quality, efficiency and service.

Our design, engineering and distribution expertise means we can improve your job scheduling while helping you improve the way you build. We'll work with you to advise on the best system for your design requirements. That translates into greater efficiency, greater profit and greater growth.

Universal brings strength, commitment, innovation and expertise to your business. Our ability to synthesize products into a solution means a higher savings potential for you—and that translates to faster revenue for your business.

Combined, our facilities provide a single-source network of residential and commercial suppliers. Whether for new construction, renovation or expansion, our broad product offering of trusses, wall panels, floor systems and lumber makes your jobs go faster, easier and more efficiently.

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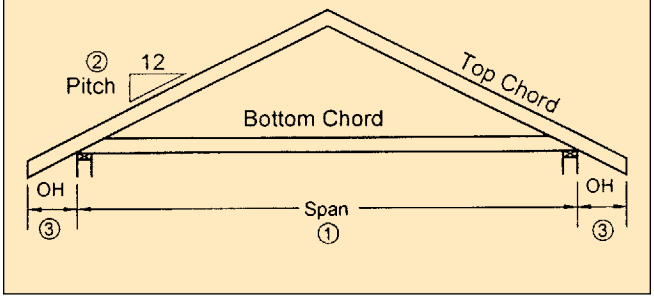
Roof Trusses

Roof Truss Details

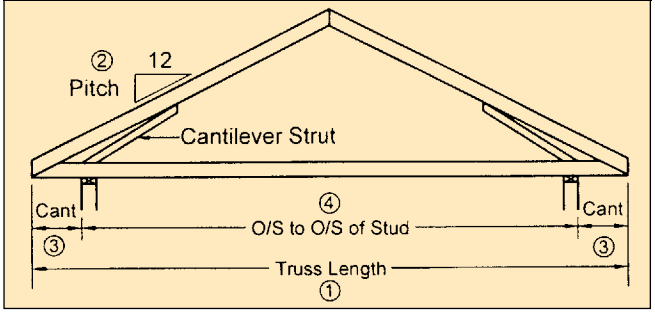
Below is information required before ordering trusses.

Standard Truss



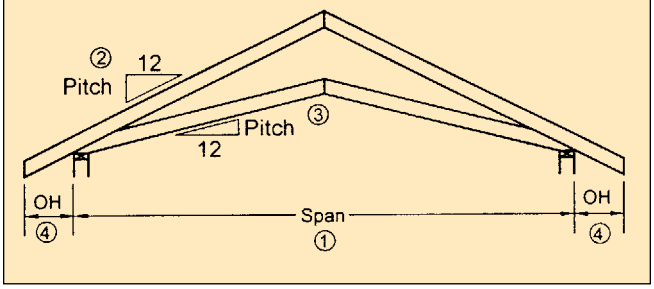
1. Span
2. Pitch
3. Overhang

Cantilevered Truss



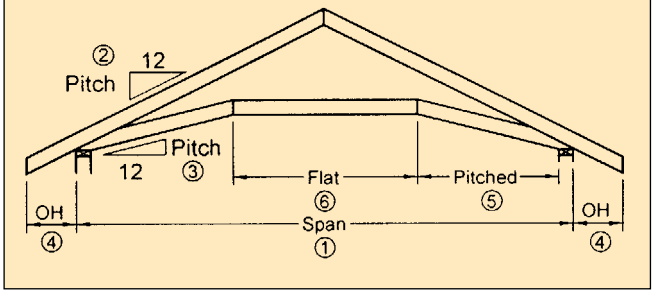
1. Truss Length
2. Pitch
3. Cantilever
4. Outside to outside of stud, to verify truss length

Scissors Truss



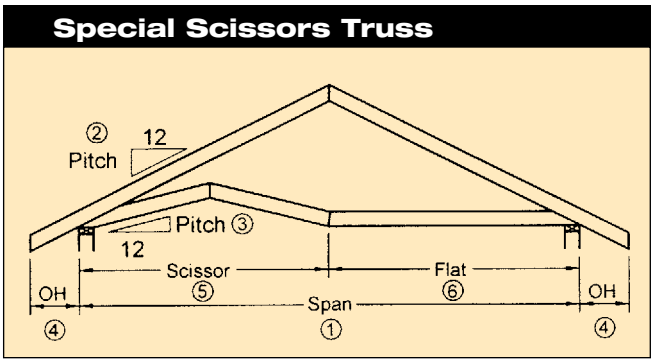
1. Span
2. Top Chord Pitch
3. Bottom Chord Pitch generally = 1/2 of Top Chord Pitch
4. Overhang

Cambered Truss



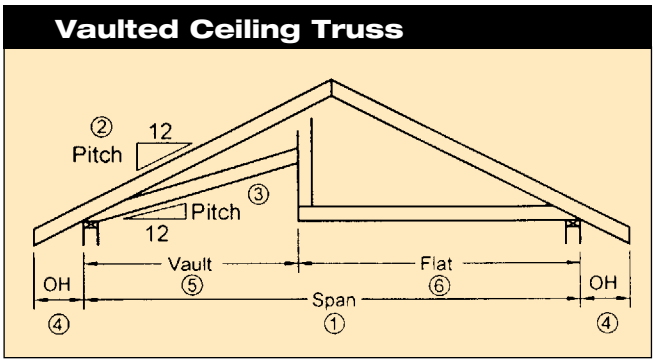
1. Span
2. Top Chord Pitch
3. Bottom Chord Pitch generally = 1/2 of Top Chord Pitch
4. Overhang
5. Pitched Dimension of Bottom Chord
6. Flat Dimension of Bottom Chord

Special Scissors Truss



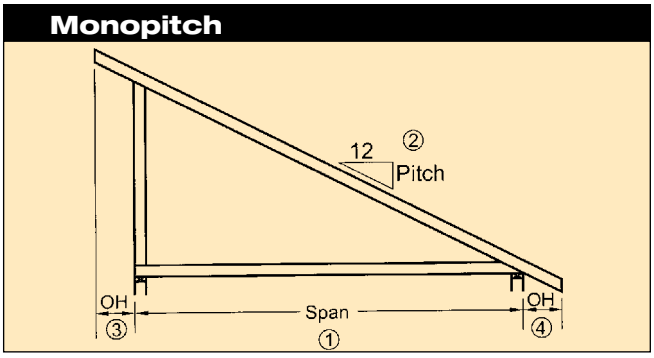
1. Span
2. Top Chord Pitch
3. Bottom Chord Pitch generally = 1/2 of Top Chord Pitch
4. Overhang
5. Scissors Dimension of Bottom Chord
6. Flat Dimension of Bottom Chord

Vaulted Ceiling Truss



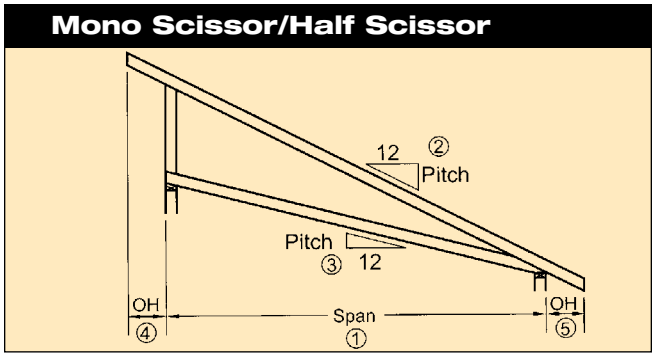
1. Span
2. Top Chord Pitch
3. Bottom Chord Pitch generally = 1/2 of Top Chord Pitch
4. Overhang
5. Vaulted Dimension of Bottom Chord
6. Flat Dimension of Bottom Chord

Monopitch



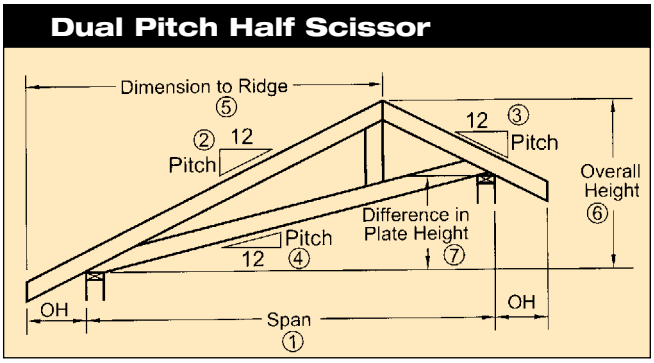
1. Span
2. Pitch
3. Overhang, upper
4. Overhang, lower

Mono Scissor/Half Scissor



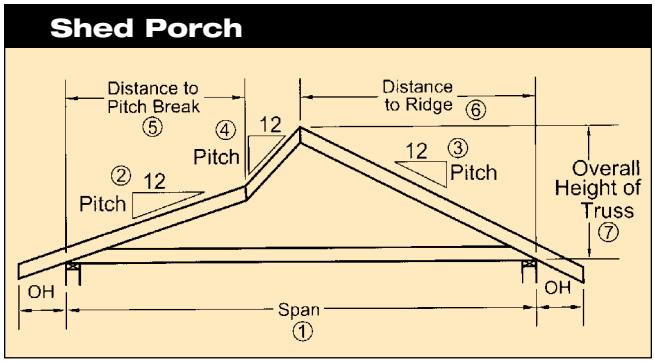
1. Span
2. Top Chord Pitch
3. Bottom Chord Pitch generally = 1/2 of Top Chord Pitch
4. Overhang, upper
5. Overhang, lower

Dual Pitch Half Scissor



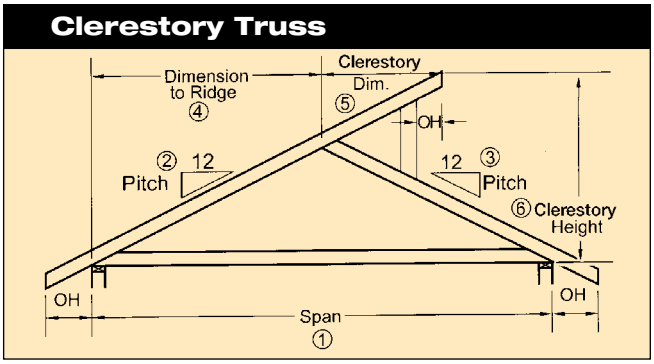
1. Span
2. Top Chord Pitch, long side
3. Top Chord Pitch, short side
4. Bottom Chord Pitch
5. Dimension to Ridge
6. Overall Height of Truss
7. Difference in Plate Height

Shed Porch



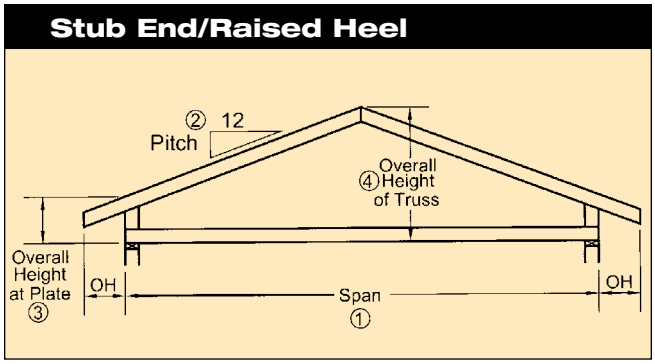
1. Span
2. Top Chord Pitch, over porch
3. Top Chord Pitch, common side
4. Top Chord Pitch, on porch side
5. Distance to Pitch Break
6. Distance to Ridge
7. Overall Height of Truss

Clerestory Truss



1. Span
2. Pitch, common side
3. Pitch, clerestory side
4. Dimension to Ridge
5. Clerestory Dimension
6. Clerestory Height

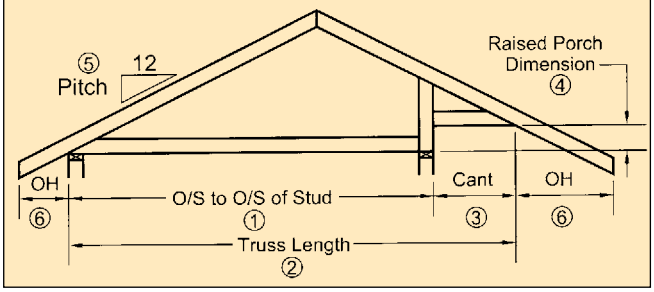
Stub End/Raised Heel



1. Span
2. Pitch
3. Overall height at plate
4. Overall height of truss

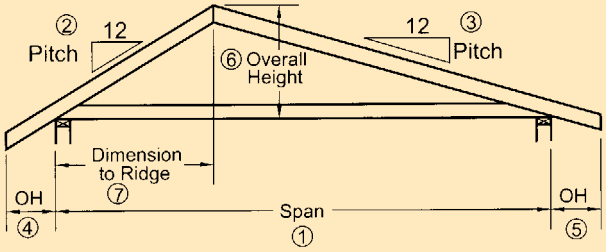
Roof Truss Details

Raised Porch Truss



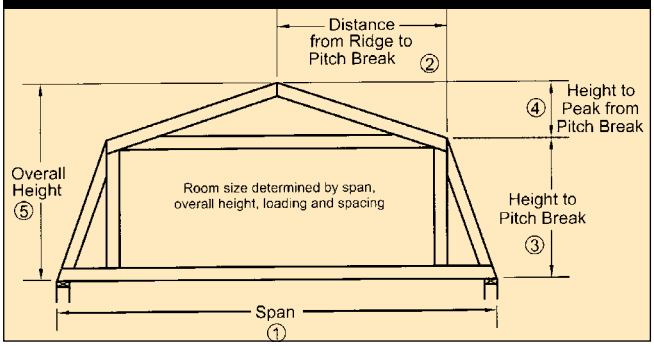
1. Outside to outside of Stud
2. Truss Length
3. Cantilever
4. Raised Porch Dimension
5. Pitch
6. Overhang

Dual Pitch Truss



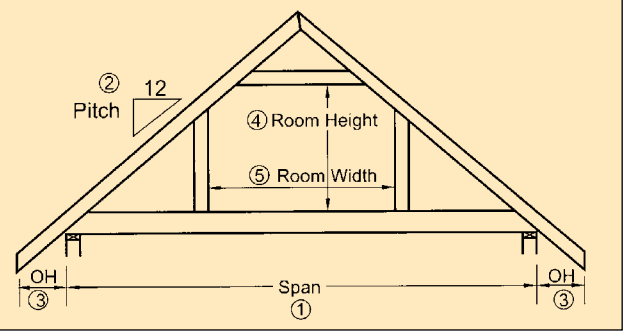
1. Span
2. Pitch, left
3. Pitch, right
4. Overhang, left
5. Overhang, right
6. Overall Height
7. Dimension to Ridge
8. Match Fascias

Gambrel Attic Frame



1. Span
2. Distance from Ridge to Pitch Break
3. Height to Pitch Break
4. Height to Peak from Pitch Break
5. Overall Height of truss

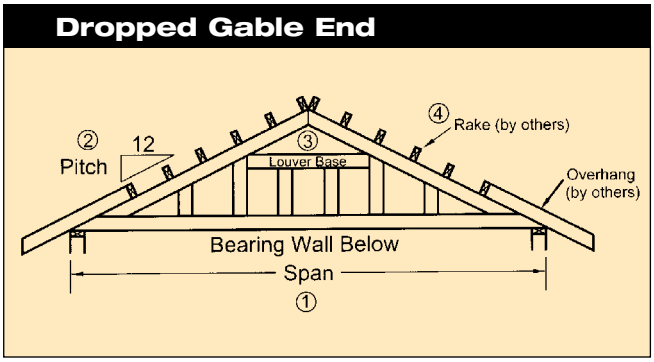
Attic Frame Truss



1. Span
2. Top Chord Pitch
3. Overhang
4. Room Height
5. Room Width

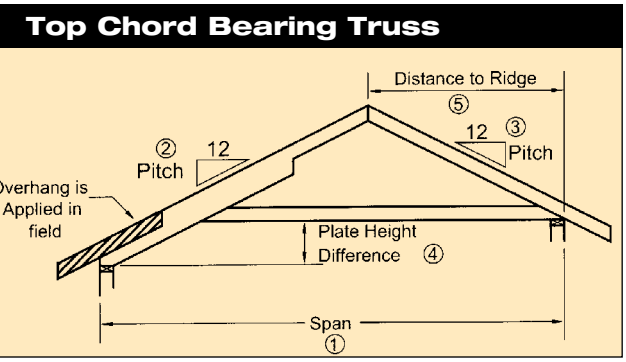
Determined by design loading and on-center spacing

Dropped Gable End



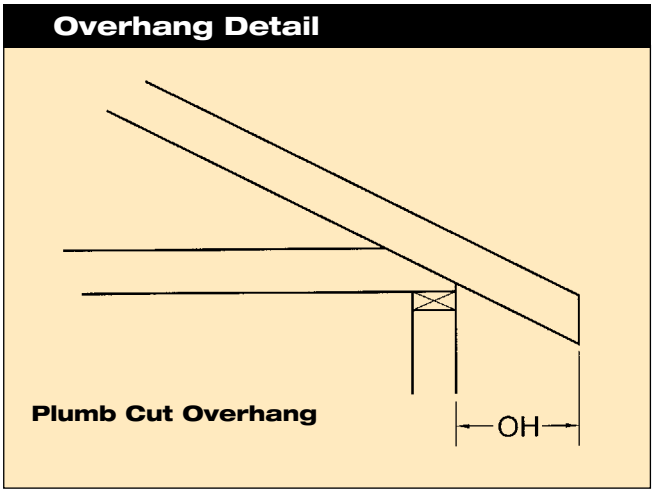
1. Span
2. Pitch
3. Louver Size
4. Rake size (2x4, 2x6, etc.)

Top Chord Bearing Truss

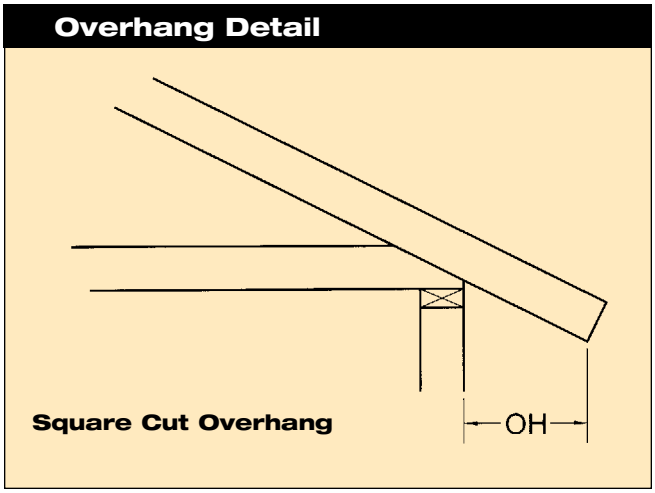


1. Span
2. Pitch, left
3. Pitch, right
4. Plate Height Difference
5. Distance to Ridge

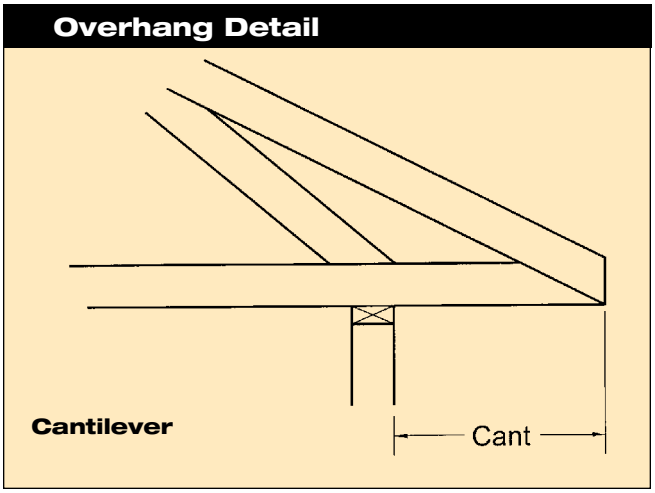
Overhang Detail



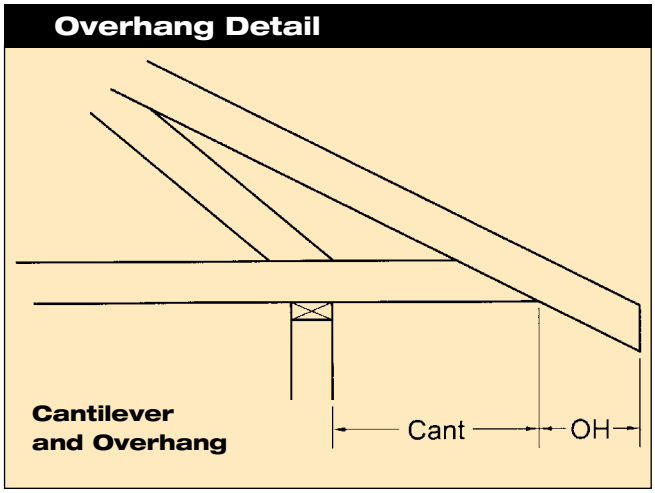
Overhang Detail



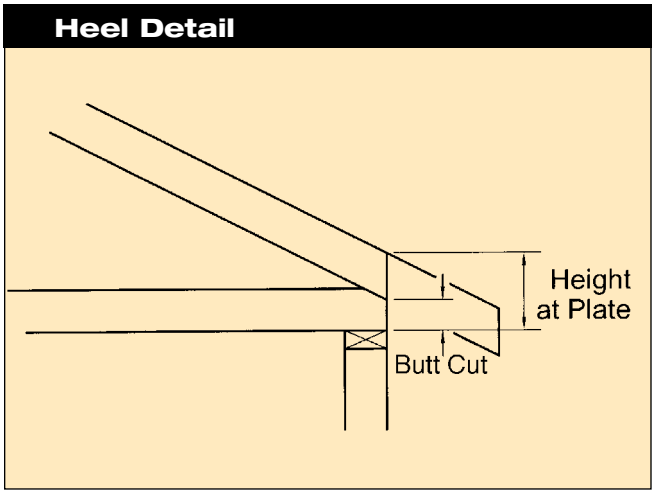
Overhang Detail



Overhang Detail



Heel Detail



Matching Existing Roofs

Matching new trusses for an addition to an existing building is tricky business. Whether the existing building is trussed or stick framed, we must have the dimensions taken from the illustrations to ensure the existing fascia meets the new addition fascia. Please fill in the blanks below for each area.

Existing Section "Y"

A _____

B _____

C1 _____

C2 _____

D _____

E _____

OH1 _____

OH2 _____

E1 _____

F _____

NEW Section "Z"

A _____

B _____

C1 _____

C2 _____

D _____

E _____

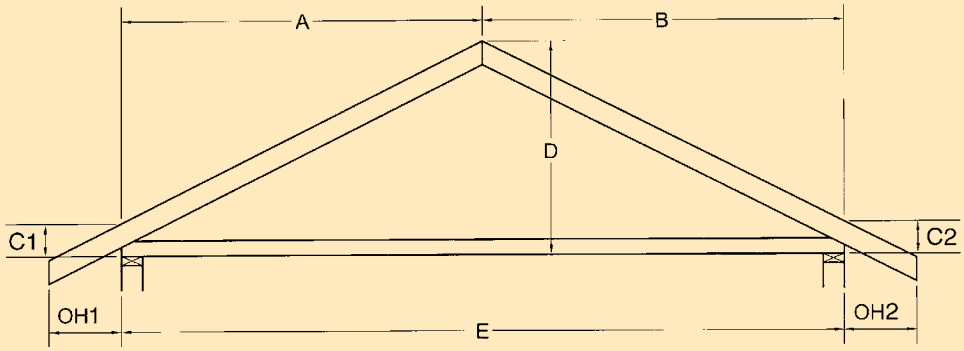
OH1 _____

OH2 _____

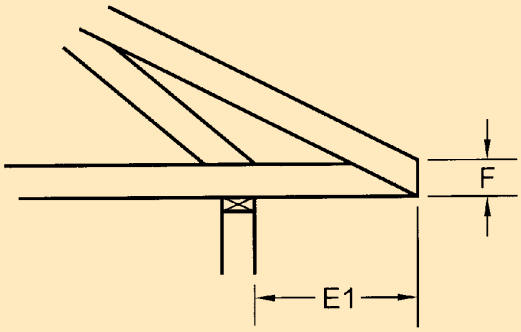
E1 _____

F _____

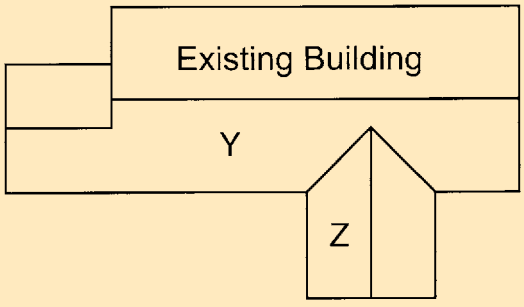
Existing Section "Y" and New Section "Z"



If Cantilevered



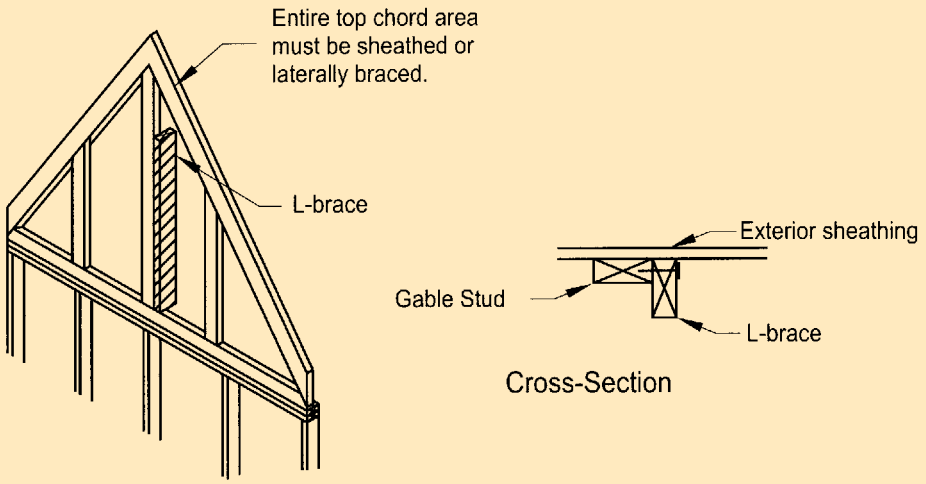
Condition Type



Vertical members of gable end trusses may be braced with L-bracing. Attach 2x_ L-brace to one edge (both edges if two braces are required) of vertical indicated on design drawing. L-brace must be at least 80% of web length.

NOTE: Additional bracing is usually required at gable ends to resist lateral loads.

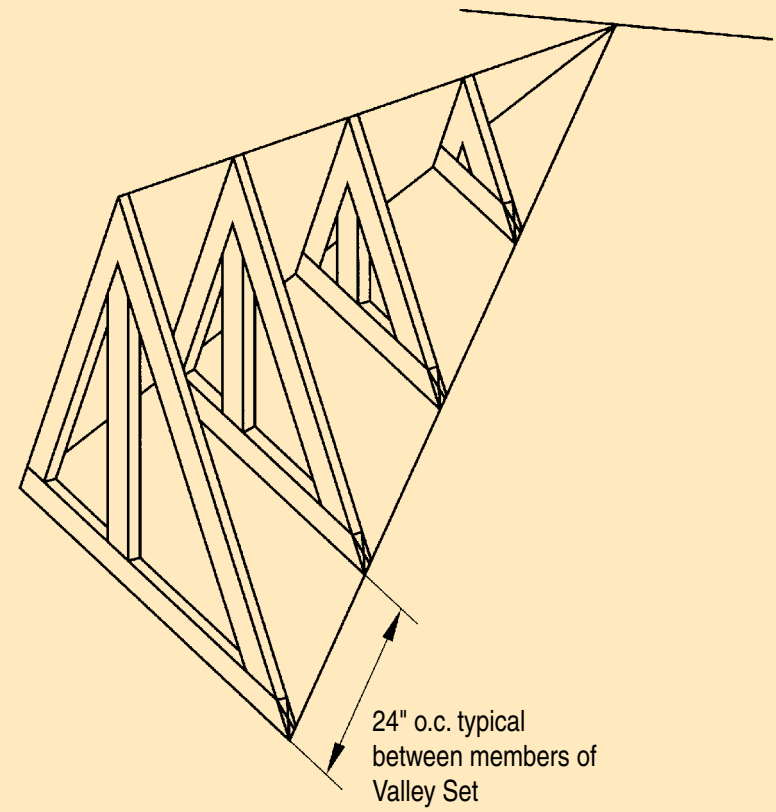
Gable End or L-Bracing



When valley sets are installed over Universal trusses, the bottom chords of Universal valley members may be considered lateral bracing when attached directly to the top chord of the supporting trusses.

NOTE: When field framing over Universal trusses, the trusses below must be spaced at 24" o.c. or less, or the valley set can sit on top of structural sheathing. Any over-framing (such as framed valleys) must be designed and installed to distribute loads evenly over entire area covered. Depending on the valley set design, lateral bracing may be required. See WTCA's latest edition of the BCSI publication for details.

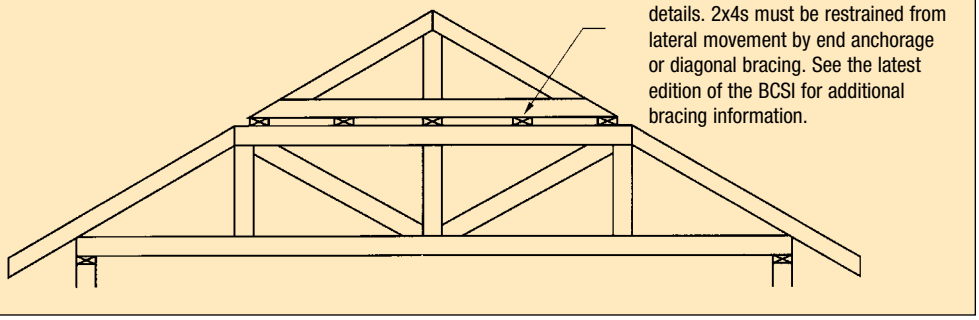
Valley Set Installation



Truss Installation and Bracing Notes

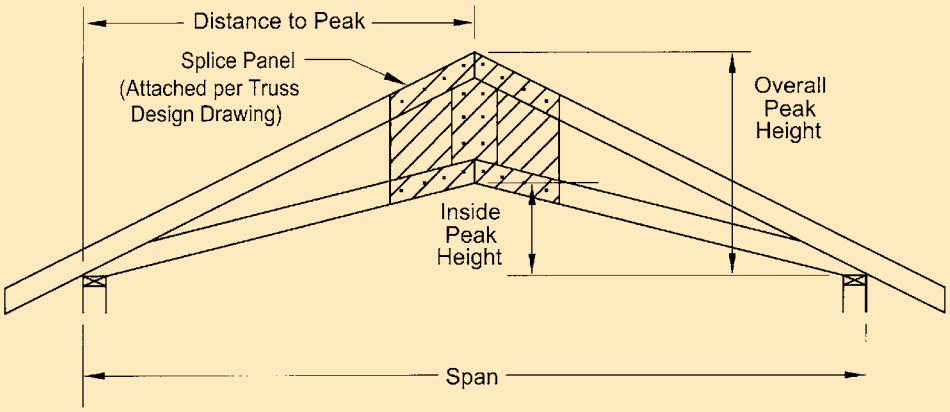
Proper handling, installation and bracing are essential to the performance of your Universal trusses. The information provided here illustrates some common practices involved in installing and bracing trusses. These are not the only methods, nor are they appropriate for all applications. It is important to read and understand all information on the individual truss design drawings, BCSI 1-03 booklet and/or BCSI 1-03 summary sheet. Universal Forest Products is not responsible for supplying the design, material or labor for bracing of trusses.

Piggy Back Attachment



The recommended assembly for Piggy Back trusses.
Material and labor are not supplied by Universal Forest Products, Inc.

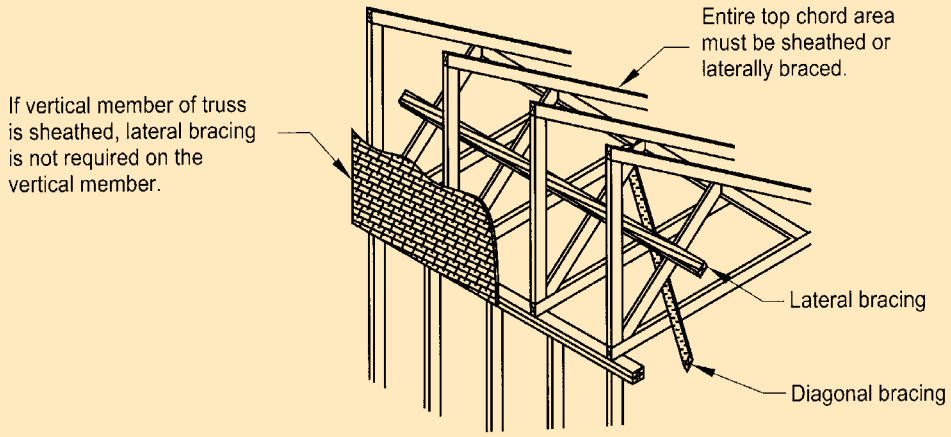
Field Splice Scissors



Field-spliced scissors require field assembly by others. It is necessary that the above dimensions be maintained on all trusses. The trusses should be assembled in a temporary on-site jig to assure continuity. The splice panel is to be attached per instructions on the individual truss design drawings. Extreme care must be used in the assembly, handling and erection processes. See the individual truss drawings, layout, the latest edition of the BCSI *booklet and/or the* BCSI *summary sheet for additional information.*

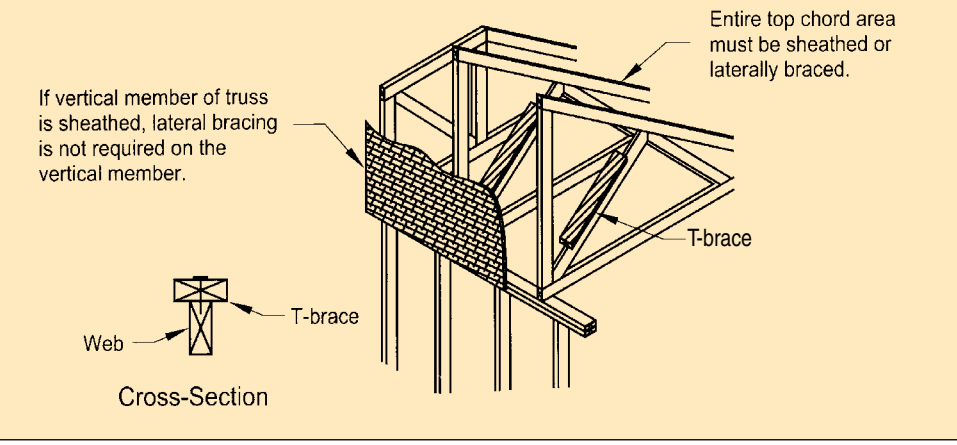
Bracing information found on the Universal design drawings is based on individual truss design and is not the only bracing required for your truss system. Bracing design and specifications are a part of the overall building design and should be specified by the building designer. The latest edition of the BCSI recommends that all bracing be a minimum 2x4 grade marked lumber of the maximum possible length. See BCSI for further bracing information. Following are some commonly accepted bracing practices.

Continuous Lateral Bracing



Webs of four or more adjacent trusses with similar webbing may be braced with continuous lateral bracing attached to one edge of the web in each truss. This bracing must be laterally restrained by end anchorage and/or diagonal bracing.

T-Bracing



When continuous bracing is not possible or desirable, T-bracing may be used. Attach 2x_T-brace to one edge (both edges if two braces are required) of web indicated on design drawing. T-brace must be at least 80% of web length.

Attic Truss Maximum Room Size

Rooms are limited to 5'-0" minimum kneewalls and 7'-8" minimum ceiling height with a maximum ceiling height as noted. Maximum room width must be based on the next lower span for "in between spans" (e.g., 24'-2" truss must be based on 24'-0" span).

All data shown is based on bearings at the end of the truss. **Cantilevers and interior bearings can overstress the design instead of helping.** These conditions should be verified by the UFP Sales/Design Department. Designs are based on 2x6 select structural top chords and 2x10 #1 bottom chords. All lumber is southern yellow pine. Ceiling joists to be 2x4 #1 minimum.

Note: Room widths exceeding 14'-0" may result in undesirable bounce in floor system.

Roof Live: 30 psf

Roof Dead: 7 psf

Ceiling: 10 psf

Room Live: 40 psf

Spacing: 24"

47 PSF LOAD

*Indicates Piggy Back Design. All others are calculated without overhang.

SPAN	8/12	9/12
22'		
23'		
24'		
25'		
26'		Width = 9'-0"
		Height = 7'-8"
27'		Width = 10'-0"
		Height = 7'-8"
28'		Width = 11'-0"
		Height = 7'-8"
29'	Width = 10'-6"	Width = 12'-6"
	Height = 7'-8"	Height = 8'-0"
30'	Width = 11'-6"	Width = 13'-0"
	Height = 7'-8"	Height = 8'-0"
31'	Width = 11'-6"	Width = 13'-6"
	Height = 8'-0"	Height = 8'-0"
32'	Width = 12'-0"	Width = 14'-6"
	Height = 8'-0"	Height = 8'-0"
33'	Width = 13'-0"	Width = 14'-6"*
	Height = 8'-0"	Height = 8'-0"
34'	Width = 13'-6"	Width = 15'-0"*
	Height = 8'-0"	Height = 8'-0"
35'	Width = 13'-6"	Width = 15'-6"*
	Height = 8'-0"	Height = 8'-0"
36'	Width = 14'-0"	Width = 15'-6"*
	Height = 8'-0"	Height = 8'-0"
37'	Width = 14'-6"*	Width = 15'-6"*
	Height = 8'-0"	Height = 8'-0"
38'	Width = 14'-6"*	Width = 15'-6"*
	Height = 8'-0"	Height = 8'-0"
39'	Width = 15'-0"*	Width = 15'-6"*
	Height = 8'-0"	Height = 8'-0"
40'	Width = 15'-0"*	Width = 15'-6"*
	Height = 8'-0"	Height = 8'-0"

Attic Truss Maximum Room Size

47 PSF LOAD

*Indicates Piggy Back Design. All others are calculated without overhang.

SPAN	10/12	11/12	12/12
22'		Width = 8'-6"	Width = 10'-6"
		Height = 8'-0"	Height = 8'-0"
23'	Width = 8'-6"	Width = 9'-6"	Width = 11'-6"
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
24'	Width = 9'-6"	Width = 10'-6"	Width = 12'-6"
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
25'	Width = 10'-6"	Width = 11'-6"	Width = 13'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
26'	Width = 11'-0"	Width = 12'-6"	Width = 14'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
27'	Width = 12'-0"	Width = 13'-6"*	Width = 15'-0"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
28'	Width = 12'-6"	Width = 14'-0"*	Width = 15'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
29'	Width = 13'-0"*	Width = 14'-6"*	Width = 16'-0"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
30'	Width = 13'-6"*	Width = 15'-0"*	Width = 16'-0"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
31'	Width = 15'-6"*	Width = 15'-6"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
32'	Width = 15'-6"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
33'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
34'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
35'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
36'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
37'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
38'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
39'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"
40'	Width = 16'-0"*	Width = 16'-0"*	Width = 16'-6"*
	Height = 8'-0"	Height = 8'-0"	Height = 8'-0"

Plated Floor Trusses

Residential Floor Truss Span Tables

L/360

1 Spans based on a 2x4 #1 Dense SYP Lumber.

2 L/360 Live Load deflection is minimum allowed and may not perform to end user's satisfaction. Use deepest truss possible to reduce deflection and bounce.

3 Spans include bearings at each end, are absolute maximum and cannot be stretched.

L/480

1 Spans based on a 2x4 #1 Dense SYP Lumber.

2 Spans include bearings at each end, are absolute maximum and cannot be stretched.

4 Design Loading Example

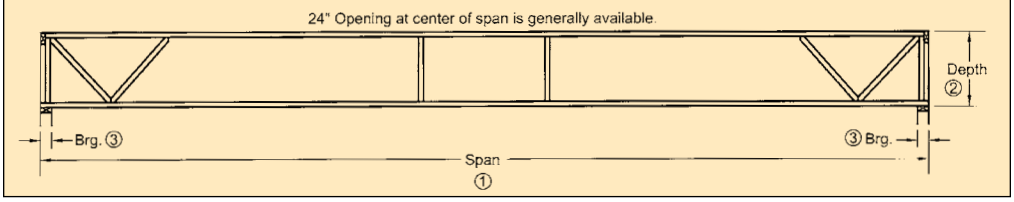
40 PSF T.C. Live
10 PSF T.C. Dead
5 PSF B.C. Dead
55 PSF Total Load

Check local building codes for loading requirements in your area.

L/360				
Depth	**24" o.c.**	**19.2" oc.**	**16" o.c.**	**12" o.c.**
10"	16'-9"	18'-0"	19'-2"	21'-0"
12"	18'-8"	20'-8"	22'-0"	24'-1"
14"	20'-7"	22'-10"	24'-8"	27'-1"
16"	22'-0"	24'-10"	27'-3"	29'-11"
18"	23'-8"	26'-4"	29'-0"	32'-6"
20"	25'-0"	28'-0"	30'-8"	35'-3"
22"	26'-5"	29'-6"	32'-3"	37'-5"
24"	27'-7"	31'-0"	33'-9"	39'-1"

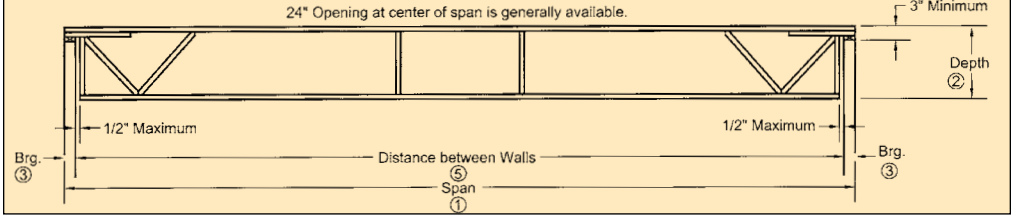
L/480				
Depth	**24" o.c.**	**19.2" o.c.**	**16" o.c.**	**12" o.c.**
10"	15'-1"	16'-4"	17'-5"	19'-1"
12"	17'-6"	18'-9"	20'-0"	22'-0"
14"	19'-5"	21'-1"	22'-5"	24'-8"
16"	21'-7"	23'-2"	24'-8"	27'-3"
18"	23'-4"	25'-2"	26'-10"	29'-6"
20"	25'-0"	27'-2"	28'-10"	31'-10"
22"	26'-5"	29'-0"	30'-10"	34'-0"
24"	27'-7"	31'-0"	33'-0"	36'-2"

Bottom Chord Bearing



1. Span 2. Depth 3. Bearing Size 4. Design Loading

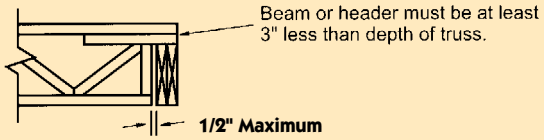
Top Chord Bearing



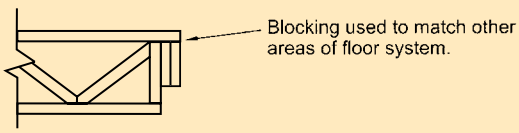
1. Span 2. Depth 3. Bearing Size 4. Design Loading 5. Distance Between Walls

Floor Truss Details

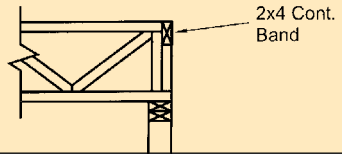
Top Chord Bearing



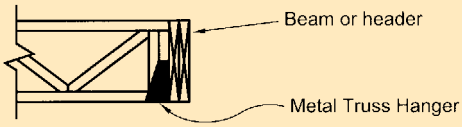
Top Chord Bearing with Blocking



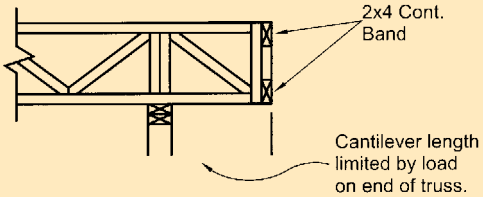
Bottom Chord Bearing



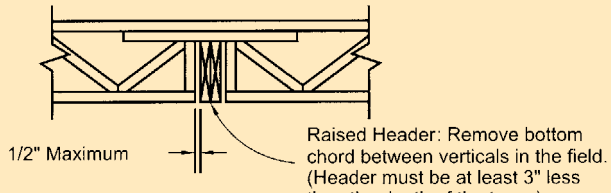
Hangs into Bearing

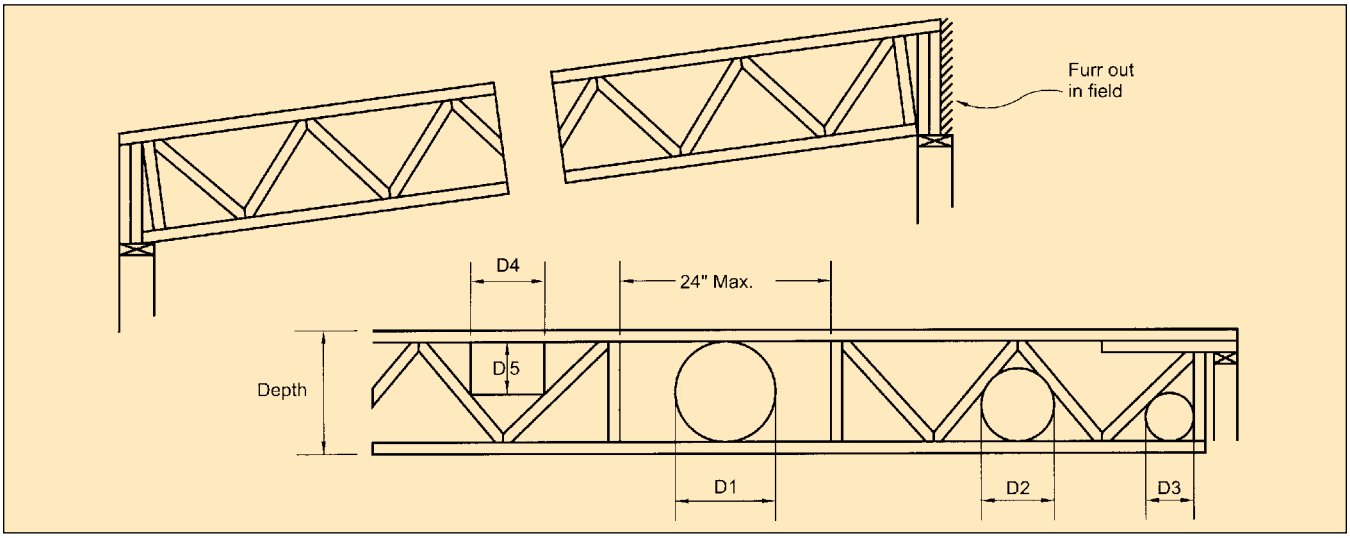


Cantilever



Hangs over Beam

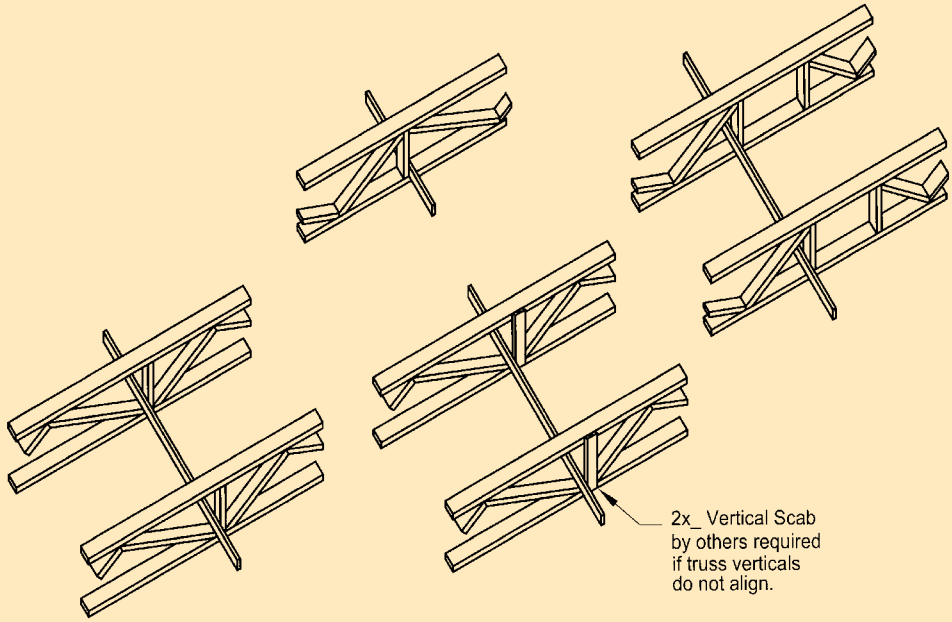




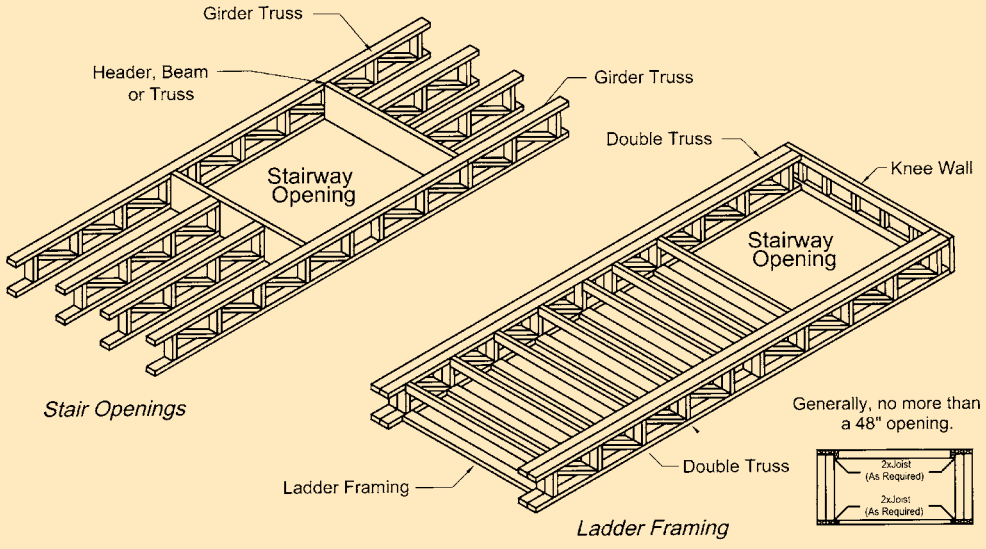
Truss Depth	D1	D2	D3	D4	D5
12"	9"	7-3/8"	5-5/8"	13-1/2"	4"
14"	11"	8-7/8"	6-1/2"	13-1/2"	5"
16"	13"	10"	7-1/4"	13-1/2"	6"
18"	15"	11-1/8"	8"	13-1/2"	6-1/2"
20"	17"	12-1/2"	8-1/2"	13-1/2"	7-1/2"
22"	19"	13-3/8"	9"	14"	8-1/2"
24"	21"	14-1/4"	9-3/8"	14"	9-1/2"

BCSI 1-03 recommends that parallel chord trusses have continuous cross and/or horizontal bridging at approximately 10' spacing. BCSI 1-03 recommends to use 1x3 minimum cross bridging or 2x6 minimum strongbacks. See Universal design drawings and BCSI 1-03 booklet for details

Strongbacks



Framing at Openings Involving Floor Trusses



Minimum Uniformly Distributed Live Loads

Loads shown are minimum allowed by code, but are not to overrule higher loads specified by architect, engineer or other specifier on a job. Please refer to IBC 2006 Code and/or local code requirements for more details.

In some cases, the floor must be designed to support the uniform live load or the concentrated loads, whichever yields the highest stresses as calculated by an engineer or architect.

Live Load **International Building Code 2006**

Occupancy or Use	(PSF) Uniform Load
Apartments (see Hotel and Multifamily)	
Armories and Drill Rooms	150
Assembly	
Fixed seats	60
Moveable seats	100
Balcony	
One- and two-family dwellings, if under 100 sq. ft.	60
If over 100 sq. ft.	100
Bowling, Pool Rooms	75
Corridors	100
Dance Halls, Dining Rooms, Restaurants	100
Fire Escapes	100
Residential	40
Garage (passenger cars)	100
Gymnasiums	100
Hospitals	
Operating labs, rooms	60
Private rooms	40
Corridors above first floor	80
Hotels (see Residential)	
Libraries	
Reading rooms	60
Stack rooms	150
Corridors above first floor	80
Manufacturing	
Light	125
Heavy	250
Office Buildings	
Offices	50
Lobbies and first-floor corridors	100
Corridors above first floor	80
Hotel and Multi-Family	
Hotel and multifamily private rooms and corridors serving them	40
Hotel and multifamily public rooms and corridors serving them	100
Dwellings (Residential)	
Sleeping rooms	30
All other rooms	40
Schools	
Classrooms	40
Corridors above first floor	80
First - floor corridors	100
Storage Warehouse	
Light	125
Heavy	250
Stores	
Retail first floor	100
Upper floor	75
Wholesale	125

I-Joists and LVL

I-Joists and LVL

I-Joists

Universal has a complete line of I-joists for every application. We offer several brands, profiles and depths. Our I-joists are stronger, straighter and more consistent in quality than dimension lumber. They are lightweight, make for less waste during installation, and are accepted by all major building codes. From solid-sawn flanges to LVL flanges, we have the type of I-joist for your project.

Code of Approval
I-joists from Universal are accepted by all major model building codes.

Warranties
I-joists are manufactured to exact specifications and are constantly monitored by third-party inspection. Universal passes along all manufacturer warranties, offering builders and homeowners peace of mind.

I-Joists

Laminated Veneer Lumber

Universal Forest Products also offers laminated veneer lumber. LVL distributed by Universal combines high-quality engineered lumber with superior service and support.

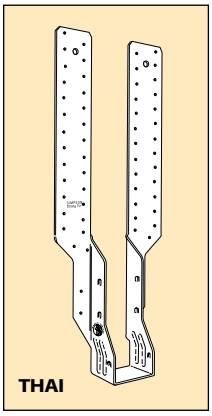
A Top Quality Choice
Laminated veneer lumber is the builder's preferred choice for headers, beams, rimboard and edge-forming material. Using LVL means quicker installation, faster set-up time and less labor. The smooth face provides a clean finish, for a professional look.

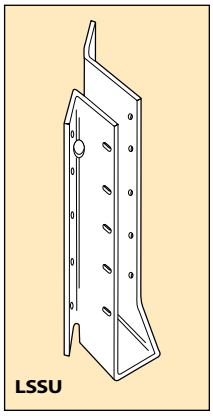
Stronger than Commonly Used Lumber
Because LVL uses engineering technology, the layers of lumber are laminated together to form a stronger, straighter and more uniform board than typical sawn lumber. LVL is as easy to handle and use as common lumber, but without the usual problems of warping, twisting, bowing or shrinking.

Laminated Veneer Lumber

Simpson Hardware

Universal has all of your hardware connector needs, including several options from Simpson Hardware. See your Universal representative for a complete listing.





Simpson Hardware

OPEN JOIST™

Trimmable Open-Web Floor Trusses

Open Joist from Universal Forest Products is a revolutionary open-web, all-wood floor truss engineered for long spans and superior load-carrying capabilities. Open Joist is lightweight and safe to handle, because it uses no sharp-edged steel connector plates. And it can be trimmed for exact fit on the job site.

Open Joist trusses are individually tested to more than twice their strength, ensuring that no defective trusses will be shipped to a building site.

Precision finger joinery and waterproof structural adhesive are used in Open Joist's assembly process to produce a stronger, more resilient wood-to-wood connection, resulting in enhanced floor system performance.

Open-Web Engineering

Open Joist uses the time-proven structural power of the triangle shape to produce its superior strength while allowing throughweb access for electrical, plumbing and HVAC ductwork. Mechanical systems can be "hidden" in the floor envelope to allow higher ceilings and avoid the need to construct deeper foundations or build bulkheads.

Open-web engineering not only helps eliminate the danger of drilling or cutting holes in the wrong place on a joist, it allows for more effective "strongback" bracing which helps dampen floor system vibrations

Trimmable Ends

Open Joist floor trusses are available immediately from stock, with trimmable ends to fit exact framing dimensions. One-foot incremental lengths and 11" of trim capability allow for accurate on-site adjustment while minimizing costs and job-site waste.

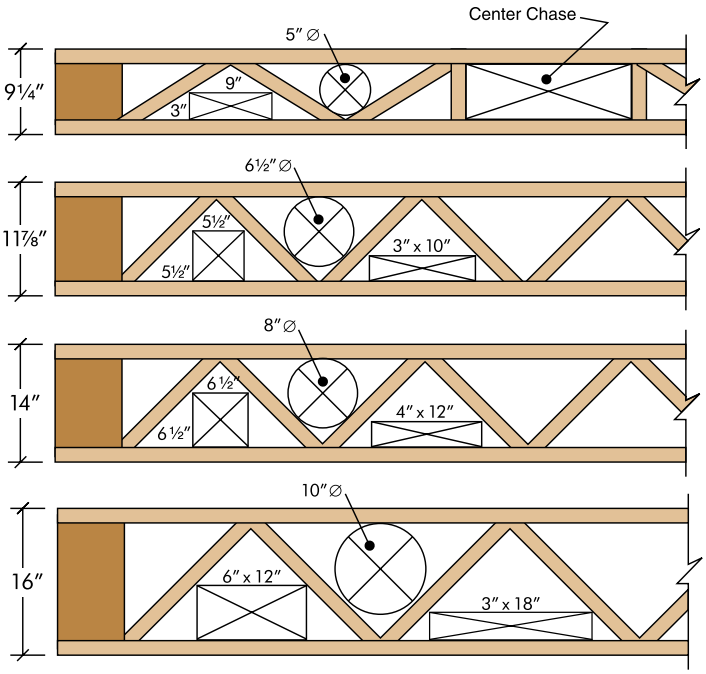
Easily Installed

Open Joist installs like dimension lumber and allows the use of simple gussets for cantilever and point load situations. Only 1-1/2" of bearing is required at each end.

Lifetime Warranty

Because Open Joist trusses are individually tested, they offer permanent quality assurance in the form of a warranty against floor system failure. This warranty remains in effect for the lifetime of the structure.

Mechanical Service Clearance



Trusses also feature a center chase opening for mechanical installation.

Depths Available

Open Joist is available in 9-1/4", 11-7/8", 14" and 16" depths, making it suitable for all wood frame construction projects. Within these depths, superior span capabilities produce the most cost-effective framing solutions.

Building Code Approvals

Open Joist is accredited by International Code Council Evaluation Service Report Number ESR-1035 and is in compliance with the following codes: 2006 International Building Code (IBC), 2006 International Residential Code (IRC), BOCA National Building Code/1999 (BNBC), 1999 Standard Building Code (SBC), and the 1997 Uniform Building Code (UBC). Open Joist is accredited by the city of Los Angeles (RR#25376 and RR#25584), New York City (MEA#300-00-E), the city of Houston (#434B) and the state of Florida (FL#5828). Code approval reports available at ww.openjoist.com.

Standard Open Joist Configurations

Joist Depth	Joist Length	Chord Size and Grade
9-1/4"	3' through 16'	3 x 2 - #2 SPF
9-1/4"	17' through 20'	4 x 2 - MSR 2100 SPF
11-7/8"	3' through 17'	3 x 2 - #2 SPF
11-7/8"	18' through 19'	4 x 2 - #2 SPF
11-7/8"	20' through 23'	4 x 2 - MSR 2100 SPF
14"	3' through 18'	3 x 2 - #2 SPF
14"	19' through 21'	4 x 2 - #2 SPF
14"	22' through 25'	4 x 2 - MSR 2100 SPF
16"	3' through 17'	3 x 2 - #2 SPF
16"	18' through 22'	4 x 2 - #2 SPF
16"	23' through 26'	4 x 2 - MSR 2100 SPF
16"	27' through 30'	4 x 2 - MSR 2400 SPF

HexiTHERM™
HIGH TEMPERATURE ADHESIVES

Open Joist's unique finger-joinery construction is held together with a structural adhesive that is resistant to water, heat and fire. Open Joist uses a phenol resorcinol adhesive developed by Hexion Specialty Chemicals, Inc. to ensure superior strength and performance.

HexiTherm Adhesives are a family of products specifically developed to provide superior heat performance for today's engineered wood applications. Utilizing state-of-the-art thermosetting and emulsion technologies, HexiTherm products are thermally stable under the most rigorous conditions.

HexiTherm Adhesives meet or exceed the highest heat and fire resistance standards in the wood products industry. They are certified, for example, by the American Lumber Standard Committee (ALSC) as Heat Resistant Adhesives (HRAs) for finger-jointed stud applications. They have also been tested and comply with specifications for 45-, 60- and 90-minute fire-rated doors.

Visit www.hexitherm.com for additional information on HexiTherm Adhesives.

OPEN JOIST™ Span Charts

NOTE: Clear spans shown on this chart are presented under the following conditions:

1 Bearing of 1-1/2".

2 "Strongback" bracing is not considered.

3 Assumes a single layer of APA-rated wood sheathing nailed or screwed.

4 Spans are clear distance between supports for uniformly loaded trusses and include allowable increases for repetitive use members.

* *Because Open Joist is a stock product, the length of an Open Joist truss determines the size and grade of the truss' chords (see tables). Maximum spans published on the chart may be limited by standard joist configuration. To find maximum clear span for each truss depth in a given loading condition, refer to the bottom line of spans shown for that load condition.*

9¼" Depth Maximum Live Load Deflection (L/360 & L/480, 1½" minimum bearing each end)

Chord* Size	Chord* Grade	Loading(PSF) Live	Dead	12" o.c. L/360	12" o.c. L/480	16" o.c. L/360	16" o.c. L/480	19.2" o.c. L/360	19.2" o.c. L/480	24" o.c. L/360	24" o.c. L/480
3x2	#2	40	15	15'-9"	15'-9"	15'-9"	14'-11"	15'-6"	14'-0"	14'-3"	12'-10"
4x2	MSR 2100	40	15	19'-9"	19'-5"	19'-1"	17'-3"	17'-11"	16'-6"	16'-11"	--
3x2	#2	50	15	15'-9"	15'-3"	15'-3"	13'-9"	14'-3"	12'-10"	13'-2"	11'-11"
4x2	MSR 2100	50	15	19'-9"	17'-11"	17'-11"	16'-4"	16'-11"	--	--	--
3x2	#2	100	15	13'-2"	11'-11"	11'-11"	10'-8"	11'-11"	9'-11"	9'-3"	8'-9"

11⅞" Depth Maximum Live Load Deflection (L/360 & L/480, 1½" minimum bearing each end)

Chord* Size	Chord* Grade	Loading (PSF) Live	Dead	12" o.c. L/360	12" o.c. L/480	16" o.c. L/360	16" o.c. L/480	19.2" o.c. L/360	19.2" o.c. L/480	24" o.c. L/360	24" o.c. L/480
3x2	#2	40	15	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"	16'-8"	16'-9"	15'-2"
4x2	#2	40	15	18'-9"	18'-9"	18'-9"	18'-9"	18'-9"	18'-7"	17'-2"	17'-2"
4x2	MSR 2100	40	15	22'-9"	22'-9"	22'-9"	21'-0"	21'-5"	19'-10"	19'-3"	--
3x2	#2	50	15	16'-9"	16'-9"	16'-9"	16'-5"	16'-9"	15'-2"	15'-4"	14'-1"
4x2	#2	50	15	18'-9"	18'-9"	18'-9"	18'-5"	17'-8"	17'-3"	16'-3"	--
4x2	MSR 2100	50	15	22'-9"	21'-5"	21'-5"	19'-8"	20'-3"	--	--	--
3x2	#2	100	15	15'-7"	14'-1"	13'-11"	12'-9"	12'-3"	11'-11"	10'-4"	10'-4"
4x2	#2	100	15	16'-11"	--	--	--	--	--	--	--

14" Depth Maximum Live Load Deflection (L/360 & L/480, 1½" minimum bearing each end)

Chord* Size	Chord* Grade	Loading (PSF) Live	Dead	12" o.c. L/360	12" o.c. L/480	16" o.c. L/360	16" o.c. L/480	19.2" o.c. L/360	19.2" o.c. L/480	24" o.c. L/360	24" o.c. L/480
3x2	#2	40	15	17'-9"	17'-9"	17'-9"	17'-9"	17'-9"	17'-9"	17'-9"	16'-4"
4x2	#2	40	15	20'-9"	20'-9"	20'-9"	20'-9"	20'-9"	19'-10"	18'-9"	18'-5"
4x2	MSR 2100	40	15	24'-9"	24'-9"	24'-8"	22'-9"	23'-5"	21'-2"	20'-10"	--
3x2	#2	50	15	17'-9"	17'-9"	17'-9"	17'-7"	17'-9"	16'-5"	16'-4"	15'-3"
4x2	#2	50	15	20'-9"	20'-9"	20'-9"	19'-8"	19'-9"	18'-6"	--	--
4x2	MSR 2100	50	15	24'-9"	23'-2"	23'-2"	21'-0"	21'-10"	--	--	--
3x2	#2	100	15	16'-9"	15'-2"	14'-4"	13'-8"	12'-10"	12'-8"	10'-9"	10'-9"
4x2	#2	100	15	18'-4"	--	--	--	--	--	--	--

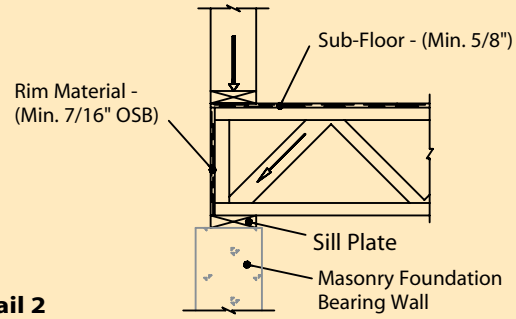
16" Depth Maximum Live Load Deflection (L/360 & L/480, 1½" minimum bearing each end)

Chord* Size	Chord* Grade	Loading (PSF) Live	Dead	12" o.c. L/360	12" o.c. L/480	16" o.c. L/360	16" o.c. L/480	19.2" o.c. L/360	19.2" o.c. L/480	24" o.c. L/360	24" o.c. L/480
3x2	#2	40	15	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"
4x2	#2	40	15	21'-9"	21'-9"	21'-9"	21'-9"	21'-9"	21'-9"	21v	21'-9"
4x2	MSR 2100	40	15	25'-9"	25'-9"	25'-9"	25'-9"	25'-9"	25'-6"	25'-9"	22'-5"
4x2	MSR 2400	40	15	29'-9"	29'-8"	29'-9"	27'-7"	28'-5"	--	26'-10"	--
3x2	#2	50	15	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"	16'-9"
4x2	#2	50	15	21'-9"	21'-9"	21'-9"	21'-9"	21'-9"	21'-9"	21'-9"	20'-10"
4x2	MSR 2100	50	15	25'-9"	25'-9"	25'-9"	25'-0"	25'-9"	22'-5"	23'-10"	--
4x2	MSR 2400	50	15	29'-9"	28'-2"	28'-3"	--	26'-10"	--	--	--
3x2	#2	100	15	16'-9"	16'-9"	16'-8"	16'-8"	13'-6"	13'-6"	11'-4"	11"-4"
4x2	#2	100	15	21'-9"	20'-10"	19'-1"	19'-0"	16'-9"	15'-9"	--	--
4x2	MSR 2100	100	15	23'-3"	--	--	--	--	--	--	--

Sample OPEN JOIST™ Framing Details

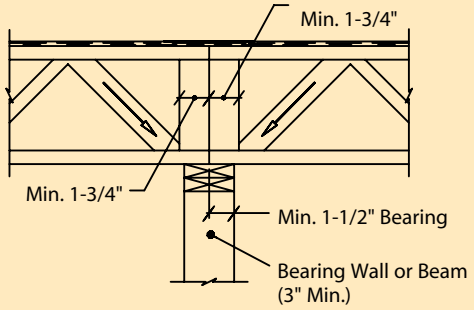
These are a few of the recommended framing details for Open Joist floor trusses. Please consult your representative for additional details.

Perpendicular Joist on End Bearing Wall



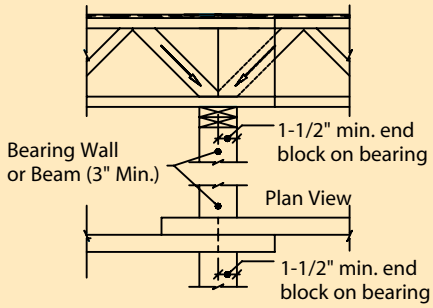
Detail 2

End-to-End on Interior Bearing



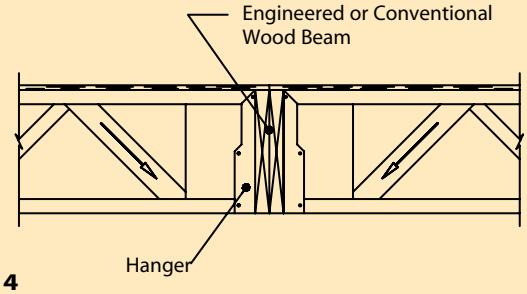
Detail 3

Overlapping on Interior Bearing



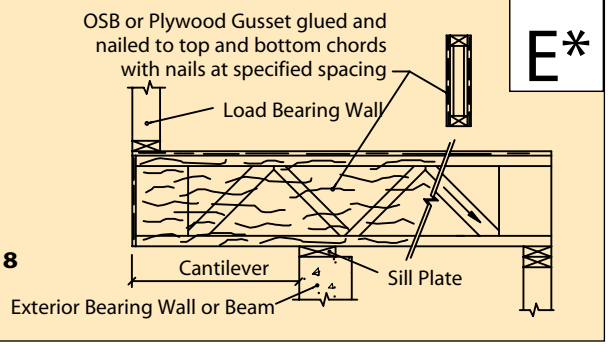
Detail 3a

Joist to Wood Beam with Appropriate Hanger



Detail 4

Cantilever Supporting Load Bearing Wall

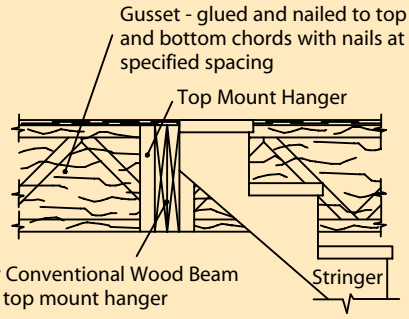


E*

Detail 8

Stair Header

Detail 10



E*

E engineering required. Engineered drawings will specify gussets and fastening.*

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2801 E. Beltline NE
Grand Rapids, MI 49525
800.598.WOOD
www.ufpi.com

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