

Job	Truss	Truss Type	Qty	Ply	BLAKE / FHC ADDITION
310754	T01G	GABLE	1	1	

I4118626

Builders FrstSource, Lake City, FL 32055

7.140 s Aug 17 2009 MiTek Industries, Inc. Thu Oct 01 14:15:28 2009 Page 1

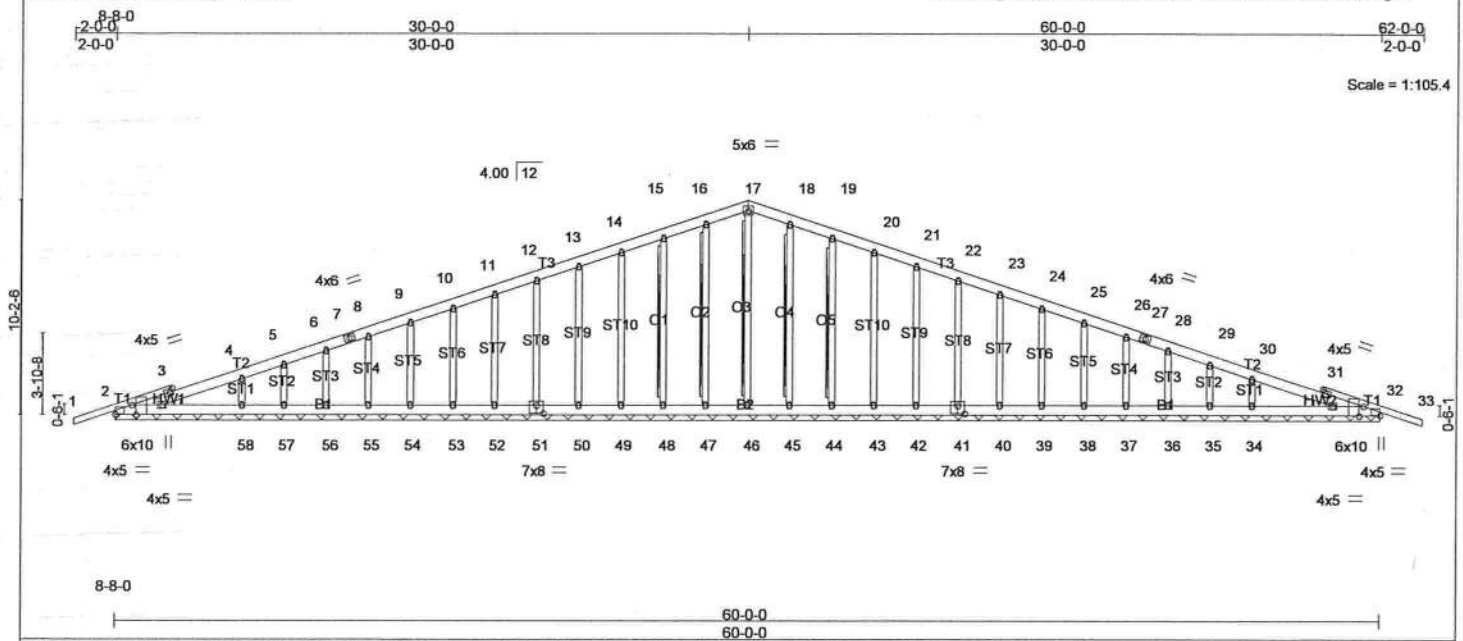


Plate Offsets (X,Y): [2:0-5-8,Edge], [2:Edge,0-5-2], [32:0-5-8,Edge], [32:Edge,0-5-2], [41:0-4-0,0-4-8], [51:0-4-0,0-4-8]

LOADING (psf)	SPACING	2-0-0	CSI	DEFL	in	(loc)	I/defl	L/d	PLATES	GRIP
TCLL 20.0	Plates Increase	1.25	TC 0.25	Vert(LL)	-0.01	33	n/r	120	MT20	244/190
TCDL 7.0	Lumber Increase	1.25	BC 0.06	Vert(TL)	-0.01	33	n/r	90		
BCLL 0.0 *	Rep Stress Incr	YES	WB 0.11	Horz(TL)	0.01	32	n/a	n/a		
BCDL 5.0	Code FBC2007/TPI2002		(Matrix)							
									Weight: 493 lb	

**LUMBER**

TOP CHORD 2 X 6 SYP No.1D \*Except\*

T1: 2 X 4 SYP No.1D

BOT CHORD 2 X 6 SYP No.1D

OTHERS 2 X 4 SYP No.3

WEDGE

Left: 2 X 4 SYP No.3, Right: 2 X 4 SYP No.3

**BRACING**

TOP CHORD

BOT CHORD

Structural wood sheathing directly applied or 6-0-0 oc purlins.

Rigid ceiling directly applied or 6-0-0 oc bracing.

MiTek recommends that Stabilizers and required cross bracing be installed during truss erection, in accordance with Stabilizer Installation guide.

**REACTIONS**

All bearings 60-0-0.

(lb) - Max Horz 2=237(LC 4)

Max Uplift All uplift 100 lb or less at joint(s) 47, 57, 45, 35 except 2=268(LC 6),  
 32=296(LC 7), 48=129(LC 6), 49=120(LC 6), 50=119(LC 4), 51=120(LC 4),  
 52=120(LC 6), 53=120(LC 4), 54=119(LC 6), 55=120(LC 4), 56=127(LC 6),  
 58=262(LC 6), 44=132(LC 5), 43=121(LC 7), 42=119(LC 5), 41=120(LC 5),  
 40=120(LC 5), 39=120(LC 5), 38=119(LC 7), 37=120(LC 5), 36=128(LC 7),  
 34=272(LC 7)

Max Grav All reactions 250 lb or less at joint(s) 46, 47, 48, 49, 50, 51, 52, 53, 54,  
 55, 56, 57, 45, 44, 43, 42, 41, 40, 39, 38, 37, 36, 35 except 2=288(LC 10),  
 32=288(LC 11), 58=354(LC 10), 34=354(LC 11)

**FORCES** (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.

TOP CHORD 2-3=279/30, 3-4=269/64, 10-11=8/258, 11-12=8/290, 12-13=9/322, 13-14=8/369,  
 14-15=8/422, 15-16=9/477, 16-17=10/515, 17-18=10/515, 18-19=9/477,  
 19-20=8/422, 20-21=8/369, 21-22=9/318, 22-23=8/266

BOT CHORD 2-58=12/261, 57-58=12/261, 56-57=12/261, 55-56=12/261, 54-55=12/261,  
 53-54=12/261, 52-53=12/261, 51-52=12/261, 50-51=12/261, 49-50=12/261,  
 48-49=12/261, 47-48=12/261, 46-47=12/261, 45-46=12/261, 44-45=12/261,  
 43-44=12/261, 42-43=12/261, 41-42=12/261, 40-41=12/261, 39-40=12/261,  
 38-39=12/261, 37-38=12/261, 36-37=12/261, 35-36=12/261, 34-35=12/261,  
 32-34=12/261

WEBS 4-58=282/329, 30-34=282/329

**NOTES** (14-15)

1) Unbalanced roof live loads have been considered for this design.

2) Wind: ASCE 7-05; 110mph (3-second gust); TCDL=4.2psf; BCDL=3.0psf; h=18ft; Cat. IV; Exp C; enclosed; MWFRS (low-rise) gable end zone and C-C Exterior(2) zone; C-C for members and forces & MWFRS for reactions shown; Lumber DOL=1.60 plate grip DOL=1.60

3) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1-2002.



October 1, 2009

Continued on page 2

**WARNING** - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITTEK REFERENCE PAGE MII-T473 BEFORE USE.

Design valid for use only with MiTek connectors. This design is based only upon parameters shown, and is for an individual building component. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult ANSI/TPI1 Quality Criteria, D58-89 and BC311 Building Component Safety Information available from Truss Plate Institute, 583 D'Oroff Drive, Madison, WI 53719.

Julius Lee Engineering  
 1109 Coastal Bay Blvd.  
 Boynton, FL 33435



Job	Truss	Truss Type	Qty	Ply	BLAKE / FHC ADDITION
310754	T01G	GABLE	1	1	Job Reference (optional)

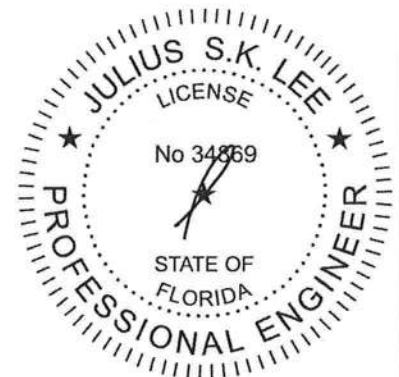
I4118626

Builders FrstSource, Lake City, FL 32055

7.140 s Aug 17 2009 MiTek Industries, Inc. Thu Oct 01 14:15:28 2009 Page 2

**NOTES (14-15)**

- 4) **WARNING:** This long span truss requires extreme care and experience for proper and safe handling and erection. For general handling and erection guidance, see Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses ("BCSI"), jointly produced by WTCA and TPI. For project specific guidance, consult with project engineer/architect/general contractor. MiTek assumes no responsibility for truss manufacture, handling, erection, or bracing.
- 5) All plates are 2x4 MT20 unless otherwise indicated.
- 6) Gable requires continuous bottom chord bearing.
- 7) Gable studs spaced at 2-0-0 oc.
- 8) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
- 9) \* This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
- 10) All bearings are assumed to be SYP No.2 .
- 11) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 47, 57, 45, 35 except (jt=lb) 2=268, 32=296, 48=129, 49=120, 50=119, 51=120, 52=120, 53=120, 54=119, 55=120, 56=127, 58=262, 44=132, 43=121, 42=119, 41=120, 40=120, 39=120, 38=119, 37=120, 36=128, 34=272.
- 12) "Semi-rigid pitchbreaks including heels" Member end fixity model was used in the analysis and design of this truss.
- 13) Warning: Additional permanent and stability bracing for truss system (not part of this component design) is always required.
- 14) This manufactured product is designed as an individual building component. The suitability and use of this component for any particular building is the responsibility of the building designer per ANSI TPI 1 as referenced by the building code.
- 15) Truss Design Engineer: Julius Lee, PE: Florida P.E. License No. 34869: Address: 1109 Coastal Bay Blvd. Boynton Beach, FL 33435

**LOAD CASE(S)** Standard

October 1, 2009

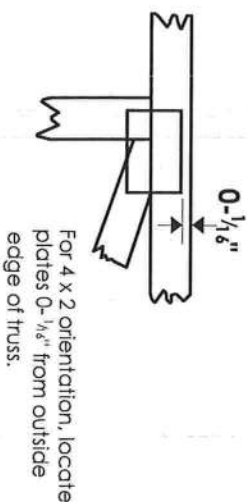
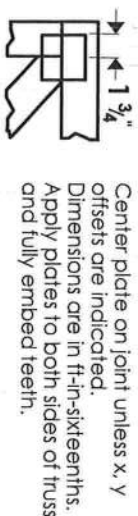
**WARNING - Verify design parameters and READ NOTES ON THIS AND INCLUDED MITEK REFERENCE PAGE MH-T473 BEFORE USE.**  
 Design valid for use only with MiTek connectors. This design is based only upon parameters shown, and is for an individual building component. Applicability of design parameters and proper incorporation of component is responsibility of building designer - not truss designer. Bracing shown is for lateral support of individual web members only. Additional temporary bracing to insure stability during construction is the responsibility of the erector. Additional permanent bracing of the overall structure is the responsibility of the building designer. For general guidance regarding fabrication, quality control, storage, delivery, erection and bracing, consult **ANSI/TPI1 Quality Criteria, D58-89 and BCSI1 Building Component Safety Information** available from Truss Plate Institute, 583 D'Onofrio Drive, Madison, WI 53719.

Julius Lee Engineering  
 1109 Coastal Bay Blvd.  
 Boynton, FL 33435



# Symbols

## PLATE LOCATION AND ORIENTATION



\*Plate location details available in Mitek 20/20 software or upon request.

## PLATE SIZE

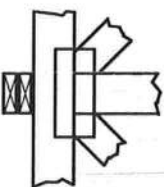
4 X 4

The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

## LATERAL BRACING LOCATION



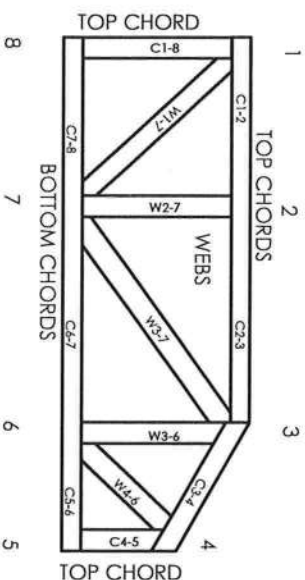
## BEARING



## Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.  
DSB-89: Design Standard for Bracing.  
BCS11: Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

# Numbering System



JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.

CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.

## PRODUCT CODE APPROVALS

ICC-ES Reports:

ESR-1311, ESR-1352, ER-5243, 9604B, 9730, 95-43, 96-31, 9667A  
NER-487, NER-561  
95110, 84-32, 96-67, ER-3907, 9432A

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# General Safety Notes

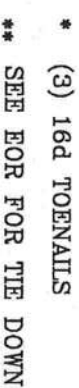
Failure to Follow Could Cause Property Damage or Personal Injury

1. Additional stability bracing for truss system, e.g., diagonal or X-bracing, is always required. See BCS11.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative T, I, or Eliminator bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing of 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treed lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.

Julius Lee Engineering  
1109 Coastal Bay Blvd.  
Boynton, FL 33435



#2 HIP OR COMMON TRUSS



UPLIFT VALUES DO TAKE INTO ACCOUNT PORCHES EXPOSED

BC LIVE LOAD IS NON CONCURRENT 10%

MAX 7'0"

MANUFACTURING THE TRUSSES REQUIRING EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. ANCHORING THE TRUSSES TO EXISTING CONCRETE FLOOR SLABS SHALL BE DONE BY TYPICAL DETAILING PRACTICES. REFER TO BCSTI-1-63 BUILDING COMPONENT SAFETY INFORMATION DTD, PUBLISHED BY TPI CRUSS PLATE INSTITUTE, 5985 YOUNGWOOD LN, SUITE 200, MAISON, VA 53719 AND VITA (VAD) TRUSS COUNCIL OF AMERICA, 6500 ENTERPRISE LV, MADISON, WI 53719 FOR SAFETY PRACTICES PRIOR TO PERFORMING THESE FUNCTIONS. UNLESS OTHERWISE INDICATED, TOP CHORD SHALL HAVE PROPERLY ATTACHED STRUCTURAL PANELS AND BOTTOM CHORD SHALL HAVE A PROPERLY ATTACHED ROOF CEILING.

PRODUCTS== FURNISH COPY OF THIS DESIGN TO INSTALLATION CONTRACTOR. ALPINE ENGINEERED PRODUCTS, INC., SHALL NOT BE RESPONSIBLE FOR ANY DEVIATION FROM THIS DESIGN; ANY FAILURE TO BUILD THE TRUSSES IN CONFORMANCE WITH TPI OR FABRICATING, HANDLING, SHIPPING, INSTALLING & BRACING OF TRUSSES. DESIGN CONCORDS WITH APPLICABLE PROVISIONS OF NDS (NATIONAL DESIGN & BRACING CODE). TPI ALPINE CONNECTOR PLATES ARE MADE OF E0/B/16GA (V/A/S) ASH 6063 GRADE GRADING AND TPI ALPINE CONNECTOR PLATES ARE MADE OF E0/B/16GA (V/A/S) ASH 6063 GRADE GRADING. ON EACH DESIGN, POSITIVE CONNECTIONS TO EACH JOINT OF TRUSSES AND UNLESS OTHERWISE INDICATED, ALL TRUSSES SHALL BE FULLY BRACED TO EACH OTHER AT EVERY JOINT. THE BRACING SHALL BE PER ANNEX A3 OF TPI-1-2008 SEC. 3.1. SEE, ON THIS DRAWING INDICATES ACCEPTANCE OF PROFESSIONAL ENGINEERING RESPONSIBILITY SOLELY FOR THE TRUSS COMPONENT DESIGN SHOWN. THE SUSTAINABILITY AND USE OF THIS COMPONENT FOR ANY BUILDING IS THE RESPONSIBILITY OF THE BUILDING DESIGNER, PER ANSI/TPI 1 SEC. 2.

CONG. ENGINEERS, P.A.

[illegible]

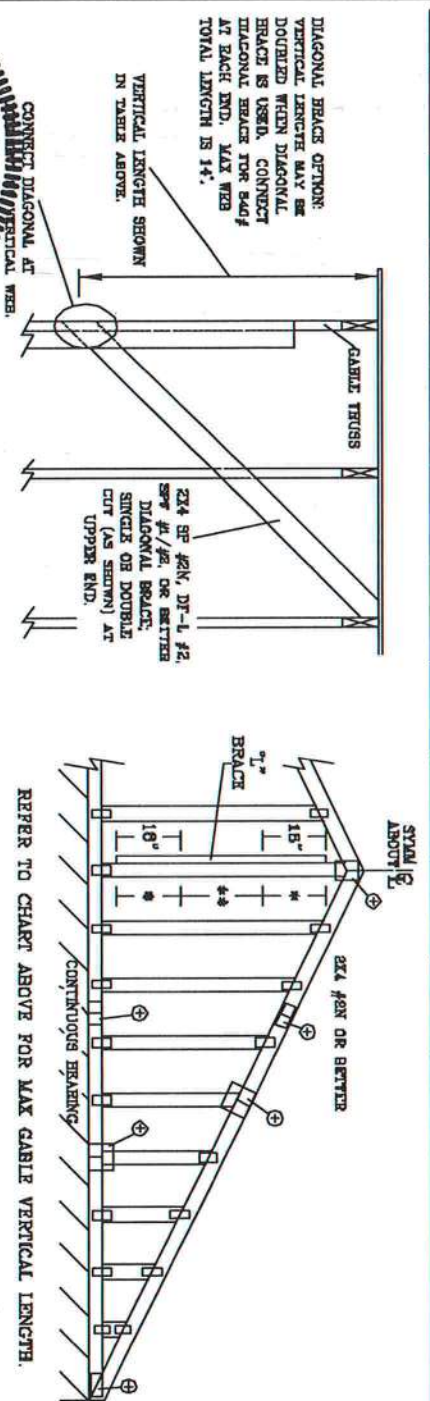
REF	7'MAX STBK CS
DATE	Jun./27/2008
DRWG	
-ENG	

**REVIEWED**  
By Julius Ioe at 10:52 am, Jun 27, 2008



ASCE 7-02: 130 MPH WIND SPEED, 16' MEAN HEIGHT, ENCLOSED, I = 1.00, EXPOSURE C

MAX GABLE VERTICAL LENGTH		BRACE		NO		(1) 1X4 "L" BRACE *		(1) 2X4 "L" BRACE *		(2) 2X4 "L" BRACE **		(1) 2X6 "L" BRACE *		(2) 2X8 "L" BRACE *	
CABLE VERTICAL SPECIES	GRADE	BRACE	NO	GROUP A		GROUP B		GROUP A		GROUP B		GROUP A		GROUP B	
				1X4 "L"	2X4 "L"	1X4 "L"	2X4 "L"	1X4 "L"	2X4 "L"	1X4 "L"	2X4 "L"	1X4 "L"	2X4 "L"	1X4 "L"	2X4 "L"
SPF	#1 / #2	3' 4"	6' 10"	6' 0"	6' 11"	7' 1"	8' 3"	8' 3"	8' 3"	10' 10"	11' 2"	12' 11"	13' 3"	12' 11"	13' 3"
	#3	3' 3"	4' 11"	4' 11"	6' 6"	6' 6"	8' 3"	8' 3"	8' 3"	10' 1"	10' 1"	12' 11"	12' 11"	12' 11"	12' 11"
	STUD	3' 3"	4' 11"	4' 11"	6' 5"	6' 5"	8' 3"	8' 3"	8' 3"	10' 0"	10' 0"	12' 11"	12' 11"	12' 11"	12' 11"
	STANDARD	3' 3"	4' 2"	4' 2"	5' 6"	5' 6"	7' 5"	7' 5"	7' 5"	8' 8"	8' 8"	11' 8"	11' 8"	11' 8"	11' 8"
SP	#1	3' 8"	5' 10"	6' 3"	6' 11"	7' 5"	8' 3"	8' 3"	8' 3"	10' 10"	11' 8"	12' 11"	13' 11"	12' 11"	13' 11"
	#2	3' 7"	6' 10"	6' 3"	6' 11"	7' 5"	8' 3"	8' 3"	8' 3"	10' 10"	11' 8"	12' 11"	13' 11"	12' 11"	13' 11"
	#3	3' 6"	5' 0"	6' 0"	6' 8"	6' 8"	8' 3"	8' 3"	8' 3"	10' 4"	10' 4"	12' 11"	13' 7"	12' 11"	13' 7"
	STUD	3' 6"	5' 0"	5' 0"	6' 7"	6' 7"	8' 3"	8' 3"	8' 3"	10' 3"	10' 3"	12' 11"	13' 7"	12' 11"	13' 7"
DFL	STANDARD	3' 4"	4' 3"	4' 3"	5' 8"	5' 8"	7' 8"	7' 8"	7' 8"	8' 10"	8' 10"	12' 0"	12' 0"	12' 0"	12' 0"
	#1 / #2	3' 10"	6' 8"	6' 10"	7' 11"	8' 1"	9' 6"	9' 6"	9' 6"	12' 6"	12' 9"	14' 0"	14' 0"	14' 0"	14' 0"
	#3	3' 9"	6' 0"	6' 0"	7' 11"	7' 11"	9' 6"	9' 6"	9' 6"	12' 4"	12' 4"	14' 0"	14' 0"	14' 0"	14' 0"
	STANDARD	3' 9"	5' 8"	5' 8"	6' 2"	6' 2"	8' 2"	8' 2"	8' 2"	10' 7"	10' 7"	14' 0"	14' 0"	14' 0"	14' 0"
SPF	STANDARD	4' 3"	6' 8"	6' 8"	7' 2"	7' 11"	8' 6"	8' 6"	8' 6"	10' 2"	12' 5"	13' 5"	14' 0"	14' 0"	14' 0"
	#1	4' 2"	8' 8"	8' 8"	7' 2"	7' 11"	8' 6"	8' 6"	8' 6"	10' 2"	12' 5"	13' 5"	14' 0"	14' 0"	14' 0"
	#2	4' 0"	6' 8"	6' 8"	7' 2"	7' 11"	8' 6"	8' 6"	8' 6"	10' 2"	12' 5"	13' 5"	14' 0"	14' 0"	14' 0"
	STUD	4' 0"	6' 1"	6' 1"	7' 11"	8' 1"	9' 5"	9' 5"	9' 5"	12' 5"	12' 5"	14' 0"	14' 0"	14' 0"	14' 0"
DFL	STANDARD	3' 10"	5' 3"	5' 3"	6' 11"	6' 11"	8' 4"	8' 4"	8' 4"	10' 10"	10' 10"	14' 0"	14' 0"	14' 0"	14' 0"
	#1 / #2	4' 8"	7' 4"	7' 4"	8' 9"	8' 9"	10' 6"	10' 6"	10' 6"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"	14' 0"
	#3	4' 2"	6' 11"	6' 11"	8' 9"	8' 9"	10' 5"	10' 5"	10' 5"	13' 8"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"
	STUD	4' 2"	6' 11"	6' 11"	8' 9"	8' 9"	10' 5"	10' 5"	10' 5"	13' 8"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"
SP	STANDARD	4' 2"	6' 11"	6' 11"	7' 10"	7' 10"	9' 5"	9' 5"	9' 5"	11' 2"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"
	#1	4' 8"	7' 4"	7' 4"	8' 9"	8' 9"	10' 5"	10' 5"	10' 5"	11' 2"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"
	#2	4' 7"	7' 4"	7' 4"	8' 9"	8' 9"	10' 5"	10' 5"	10' 5"	11' 2"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"
	STUD	4' 4"	7' 2"	7' 2"	8' 9"	8' 9"	10' 5"	10' 5"	10' 5"	11' 2"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"
DFL	STANDARD	4' 4"	7' 1"	7' 1"	8' 9"	8' 9"	10' 5"	10' 5"	10' 5"	11' 2"	13' 8"	14' 0"	14' 0"	14' 0"	14' 0"
	#1	4' 3"	6' 1"	6' 1"	8' 0"	8' 0"	9' 5"	9' 5"	9' 5"	10' 5"	10' 5"	14' 0"	14' 0"	14' 0"	14' 0"
	#2	4' 3"	6' 1"	6' 1"	8' 0"	8' 0"	9' 5"	9' 5"	9' 5"	10' 5"	10' 5"	14' 0"	14' 0"	14' 0"	14' 0"
	STUD	4' 3"	6' 1"	6' 1"	8' 0"	8' 0"	9' 5"	9' 5"	9' 5"	10' 5"	10' 5"	14' 0"	14' 0"	14' 0"	14' 0"



REFER TO CHART ABOVE FOR MAX GABLE VERTICAL LENGTH.

DIAGONAL BRACE OPTION:  
VERTICAL LENGTH MAY BE  
DOUBLED WHEN DIAGONAL  
BRACE IS USED. CONNECT  
DIAGONAL BRACE FOR EACH  
AT EACH END. MAX WEB  
TOTAL LENGTH IS 14'.

VERTICAL LENGTH SHOWN  
IN TABLE ABOVE.

CONNECT DIAGONAL AT  
VERTICAL WEB.

2X4 SP #2N, DF-L #2,  
SPF #1/#2, OR BETTER  
DIAGONAL BRACE,  
SINGLE OR DOUBLE  
CUT (AS SHOWN) AT  
UPPER END.

ATTACH EACH "L" BRACE WITH 10d NAILS.  
\* FOR (1) "L" BRACE, SPACE NAILS AT 8" O.C.  
IN 18" END ZONES AND 4" O.C. BETWEEN ZONES.  
\*\* FOR (2) "L" BRACES, SPACE NAILS AT 3" O.C.  
IN 18" END ZONES AND 4" O.C. BETWEEN ZONES.  
"L" BRACING MUST BE A MINIMUM OF 60% OF WEB  
MEMBER LENGTH.

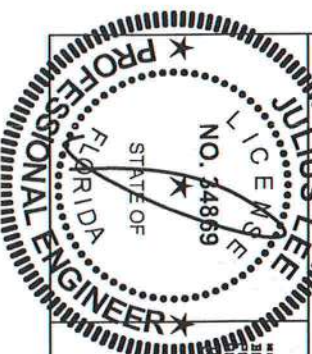
CABLE VERTICAL PLATE SIZES	
VERTICAL LENGTH	NO SPECIES
LESS THAN 4' 0"	1X4 OR 2X3
GREATER THAN 4' 0" BUT LESS THAN 11' 8"	2X4
GREATER THAN 11' 8"	2X6

+ REFER TO COMMON TRUSS DESIGN FOR  
PEAK, SPICE, AND BEEL PLATES.

BRACING GROUP SPECIES AND GRADES:	
GROUP A:	
SPECIES: PINE-LARCHE	GRADE: P-FIR
#1 / #2	STUD
#3	STUD
STUD	STUD
STANDARD	STANDARD
GROUP B:	
SPECIES: PINE-LARCHE	GRADE: P-FIR
#1 / #2	STUD
#3	STUD
STUD	STUD
STANDARD	STANDARD

CABLE TRUSS DETAIL NOTES:

LIVE LOAD DEFLECTION CRITERIA IS L/240.  
PROVIDE UPLIFT CONNECTIONS FOR 136 PLF OVER  
CONTINUOUS BEARING (6 PSF VC DEAD LOAD).  
CABLE END SUPPORTS LOAD FROM 4" O"  
OUTLOOKERS WITH 2" O" OVERHANG, OR 12"  
PLYWOOD OVERHANG.



REVIEWED  
By Julius Lee at 12:00 pm, Jun 11, 2008

JULIUS LEE'S  
CONS. ENGINEERS P.A.  
1445 BT 4th AVENUE  
DELRAY BEACH, FL 33444-2161

No. 34869  
STATE OF FLORIDA

MAX. TOT. LD. 60 PSF  
MAX. SPACING 24.0"

REF ASCE 7-02-GBR13045  
DATE 11/26/03  
DRWG. MITEK STD. GABLS IS E ET  
-ENG



MAX GABLE VERTICAL LENGTH														
2x4 GABLE VERTICAL SPACING	BRACE SPECIES	NO BRACES	(1) 1x4 "L" BRACE *				(2) 2x4 "L" BRACE **		(1) 2x6 "L" BRACE *		(2) 2x8 "L" BRACE *			
			GROUP A		GROUP B		GROUP A		GROUP B		GROUP A		GROUP B	
			#1 / #2	#3	#1 / #2	#3	#1 / #2	#3	#1 / #2	#3	#1 / #2	#3	#1 / #2	#3
24" O.C.	SPF	HF	STUD	3' 2"	5' 6"	6' 8"	6' 6"	6' 9"	7' 10"	8' 0"	10' 3"	10' 7"	12' 3"	12' 7"
				3' 1"	4' 5"	4' 5"	6' 10"	5' 10"	7' 10"	7' 10"	9' 1"	9' 1"	12' 3"	12' 3"
				3' 1"	4' 6"	4' 5"	5' 10"	6' 10"	7' 10"	7' 10"	9' 1"	9' 1"	12' 3"	12' 3"
	SP	DFL	STUD	2' 11"	3' 6"	3' 9"	6' 0"	5' 0"	6' 9"	7' 10"	7' 10"	10' 7"	10' 7"	
				3' 6"	5' 8"	5' 11"	6' 8"	7' 0"	7' 10"	8' 5"	10' 3"	11' 1"	12' 3"	13' 2"
				3' 6"	5' 6"	5' 11"	6' 6"	7' 0"	7' 10"	8' 5"	10' 3"	11' 1"	12' 3"	13' 2"
	SPF	HF	STUD	3' 3"	4' 6"	4' 6"	6' 0"	6' 0"	8' 1"	9' 4"	9' 4"	12' 3"	12' 6"	
				3' 3"	4' 8"	4' 6"	5' 11"	5' 11"	7' 10"	8' 0"	9' 3"	9' 3"	12' 3"	12' 6"
				3' 0"	3' 10"	3' 10"	5' 1"	5' 1"	6' 11"	6' 11"	8' 0"	8' 0"	10' 10"	10' 10"
	SPF	HF	STUD	3' 8"	6' 4"	6' 6"	7' 6"	7' 6"	9' 2"	11' 9"	12' 1"	14' 0"	14' 0"	
				3' 7"	5' 5"	5' 5"	7' 2"	7' 2"	8' 11"	8' 11"	11' 2"	11' 2"	14' 0"	14' 0"
				3' 7"	5' 6"	5' 5"	7' 2"	7' 2"	8' 11"	8' 11"	11' 1"	11' 1"	14' 0"	14' 0"
16" O.C.	SPF	HF	STUD	3' 7"	4' 6"	4' 8"	6' 2"	6' 2"	8' 3"	9' 3"	9' 7"	8' 7"	12' 11"	12' 11"
				4' 0"	8' 4"	8' 10"	7' 8"	8' 1"	8' 11"	8' 11"	9' 9"	12' 8"	14' 0"	14' 0"
				3' 11"	8' 4"	8' 10"	7' 8"	8' 1"	8' 11"	8' 7"	11' 9"	12' 8"	14' 0"	14' 0"
	SPF	DFL	STUD	3' 8"	5' 7"	6' 7"	7' 4"	7' 4"	8' 11"	9' 6"	11' 5"	11' 6"	14' 0"	14' 0"
				3' 8"	5' 6"	5' 6"	7' 3"	7' 3"	8' 11"	9' 5"	11' 4"	11' 4"	14' 0"	14' 0"
				3' 8"	4' 9"	4' 9"	6' 3"	6' 3"	8' 5"	8' 5"	9' 9"	9' 9"	13' 3"	13' 3"
	SPF	HF	STUD	4' 0"	6' 11"	7' 2"	8' 3"	8' 3"	9' 10"	10' 1"	12' 11"	13' 4"	14' 0"	14' 0"
				3' 11"	6' 3"	6' 3"	8' 3"	8' 3"	9' 10"	9' 10"	12' 11"	12' 11"	14' 0"	14' 0"
				3' 11"	6' 3"	6' 3"	8' 3"	8' 3"	9' 10"	9' 10"	12' 11"	12' 11"	14' 0"	14' 0"
	SPF	DFL	STUD	3' 11"	5' 4"	5' 4"	7' 1"	7' 1"	9' 6"	10' 7"	12' 11"	13' 11"	14' 0"	14' 0"
				4' 5"	6' 11"	7' 6"	8' 3"	8' 3"	9' 10"	10' 7"	12' 11"	13' 11"	14' 0"	14' 0"
				4' 4"	6' 11"	7' 6"	8' 3"	8' 3"	9' 10"	10' 7"	12' 11"	13' 11"	14' 0"	14' 0"
12" O.C.	SPF	HF	STUD	4' 2"	6' 4"	6' 4"	8' 3"	8' 3"	9' 10"	10' 4"	12' 11"	13' 3"	14' 0"	14' 0"
				4' 2"	6' 4"	6' 4"	8' 3"	8' 3"	9' 10"	10' 4"	12' 11"	13' 3"	14' 0"	14' 0"
				4' 0"	5' 6"	5' 6"	7' 3"	7' 3"	9' 9"	11' 4"	11' 4"	14' 0"	14' 0"	

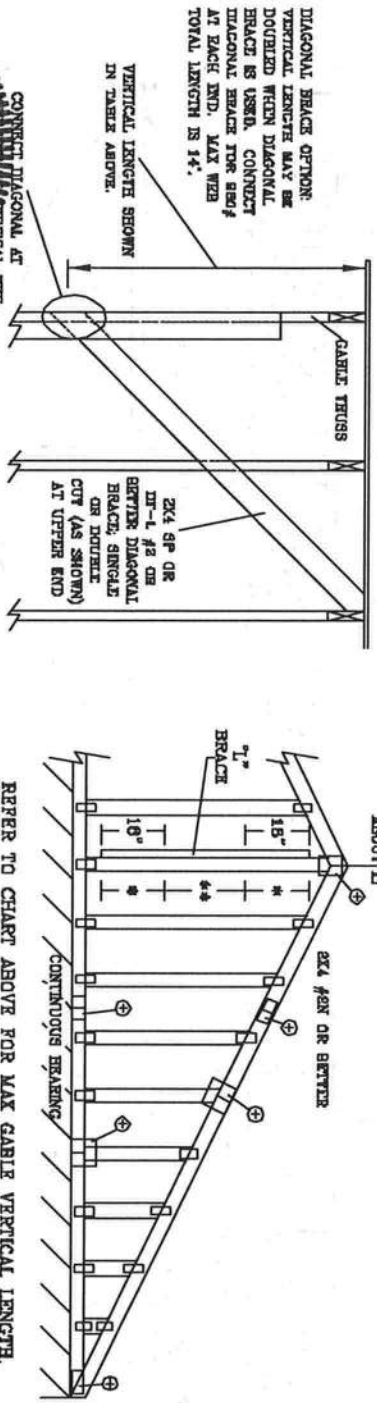
VERTICAL LENGTH	NO. SPLICER
LESS THAN 4' 0"	1X4 OR 2X3
GREATER THAN 4' 0", BUT LESS THAN 11' 6"	2X4
GREATER THAN 11' 6"	2X6

+ REFER TO COLUMN DESIGN FOR  
PLANK, SPLICE, AND BUILT PLATES.

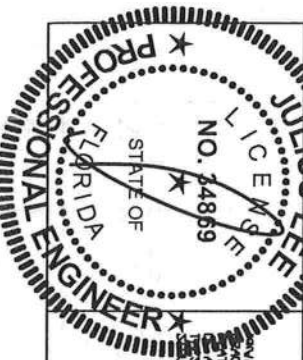
1" BRACING MUST BE A MINIMUM OF 80% OF THE  
TENSILE LENGTH.

VERTICAL LENGTH	NO. SPLICER
LESS THAN 4' 0"	1X4 OR 2X3
GREATER THAN 4' 0", BUT LESS THAN 11' 6"	2X4
GREATER THAN 11' 6"	2X6

+ REFER TO COLUMN DESIGN FOR  
PLANK, SPLICE, AND BUILT PLATES.



REFER TO CHART ABOVE FOR MAX CABLE VERTICAL LENGTH

[illegible]

**JULIUS LEE'S  
CONS. ENGINEERS P.A.**

1456 SW 4th AVENUE  
DIETARY BRANCH, FL. 33444-2101

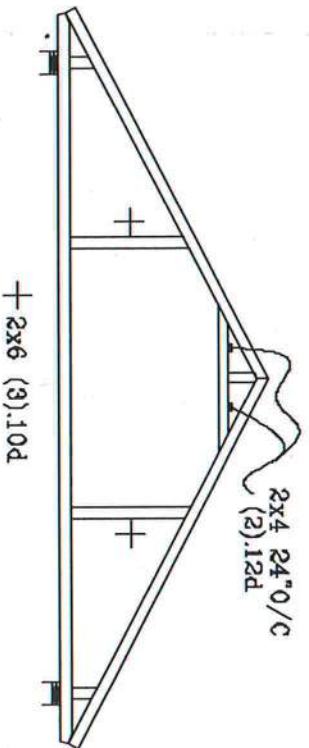
**REVIEWED**  
By Julius lee at 12:00 pm, Jun 11, 2008

No: 34869  
STATE OF FLORIDA

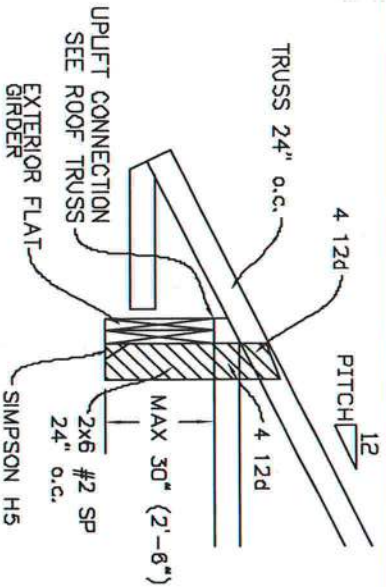
MAX. TOT. LD. 60 PSF
MAX. SPACING 24.0"

REF	ASCE# 02-GA013030
DATE	11/26/03
DWG	WEEK STD GABLE 90' E HT
-ENG	

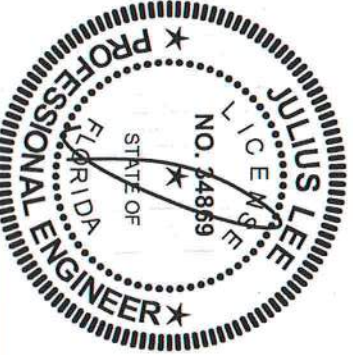
# TYPICAL ATTIC TRUSS BRACING



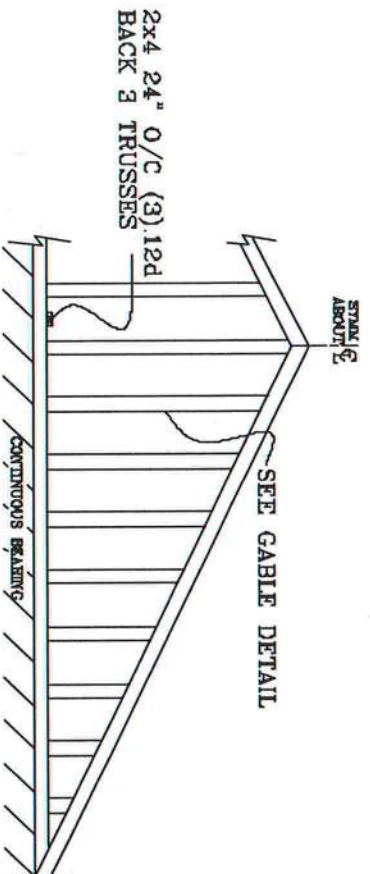
# TYPICAL ALTERNATE BRACING DETAIL FOR EXTERIOR FLAT GIRDER TRUSS



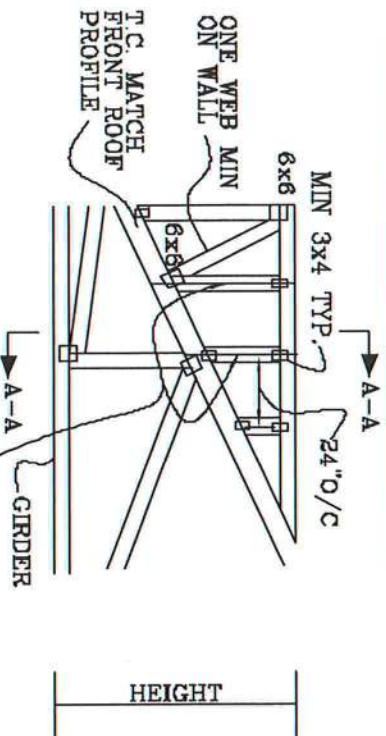
REVIEWED  
By Julius Lee at 11:59 am, Jun 11, 2008



# GABLE END TRUSS DETAIL

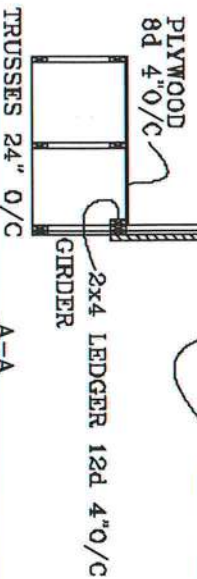


# TYPICAL WALL GIRDER VERTICAL WEB BRACING DETAIL



SEE ROOF TRUSSES FOR UPLIFT  
ROOF 24" O/C

SEE GABLE END DETAIL FOR T-BRACE BEHIND EACH VERTICAL



JULIUS LEE'S  
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1456 SW 41st AVENUE  
DIKALAK BRANCH, FL 33411-2601

No. 34869  
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TOP CHORD 2X4 #2 OR BETTER  
BOT CHORD 2X4 #2 OR BETTER  
WEBS 2X4 #2 OR BETTER

# PIGGYBACK DETAIL

REFER TO SEALED DESIGN FOR DASHED PLATES.  
SPACE PIGGYBACK VERTICALS AT 4' OC MAX.

TOP AND BOTTOM CHORD SPLICES MUST BE STAGGERED SO THAT ONE SPLICE IS NOT DIRECTLY OVER ANOTHER.

PIGGYBACK BOTTOM CHORD MAY BE OMITTED. ATTACH VERTICAL WEBS TO TRUSS TOP CHORD WITH 1.5X3 PLATE.

ATTACH PURLINS TO TOP OF FLAT TOP CHORD. IF PIGGYBACK IS SOLID LUMBER OR THE BOTTOM CHORD IS OMITTED, PURLINS MAY BE APPLIED BENEATH THE TOP CHORD OF SUPPORTING TRUSS.

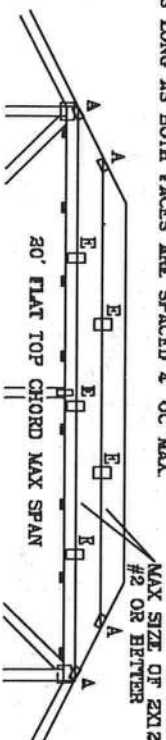
REFER TO ENGINEER'S SEALED DESIGN FOR REQUIRED PURLIN SPACING.

THIS DETAIL IS APPLICABLE FOR THE FOLLOWING WIND CONDITIONS:

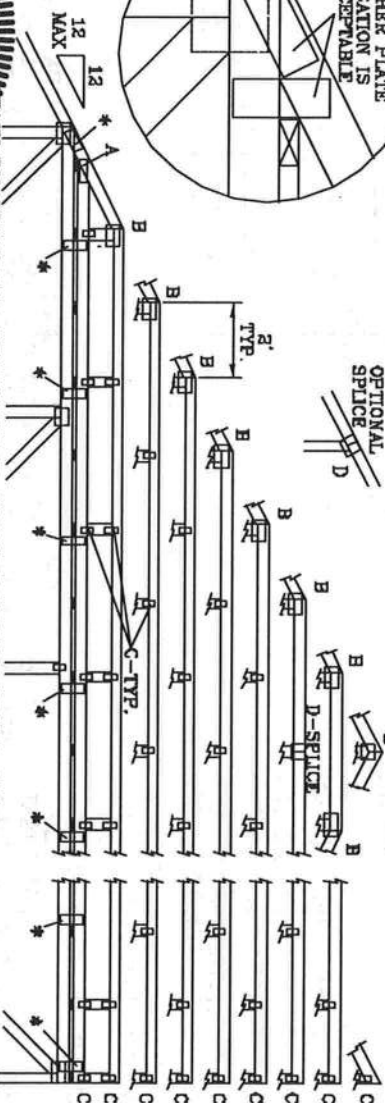
110 MPH WIND, 30' MEAN HGT, ASCE 7-02, CLOSED BLDG, LOCATED ANYWHERE IN ROOF, 1 MI FROM COAST  
CAT I, EXP C, WIND TC DL=5 PSF, WIND BC DL=5 PSF  
110 MPH WIND, 30' MEAN HGT, FBC ENCLOSED BLDG, LOCATED ANYWHERE IN ROOF  
WIND TC DL=5 PSF, WIND BC DL=5 PSF

130 MPH WIND, 30' MEAN HGT, ASCE 7-02, CLOSED BLDG, LOCATED ANYWHERE IN ROOF, CAT I, EXP C, WIND TC DL=6 PSF, WIND BC DL=6 PSF

FRONT FACE (E,\*) PLATES MAY BE OFFSET FROM BACK FACE PLATES AS LONG AS BOTH FACES ARE SPACED 4' OC MAX.



OPTIONAL  
SPLICE  
D



THIS DRAWING REPLACES DRAWINGS 634.016 634.017 & 647.045

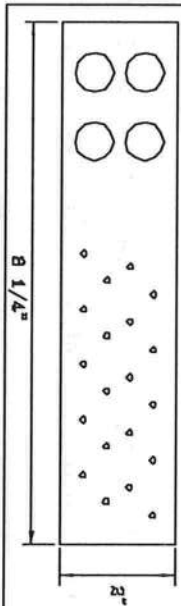
JOINT TYPE	SPANS UP TO		
	30'	36'	62'
A	2X4	2.6X4	3X6
B	4X6	6X6	6X6
C	1.5X3	1.6X4	1.5X4
D	5X4	6X6	6X6
E	4X8 OR 3X6 TRUSS AT 4' OC, ROTATED VERTICALLY		

ATTACH TRUSS PLATES WITH (8) 0.120" X 1.375" NAILS OR EQUAL, PER FACE PER PLY. (4) NAILS IN EACH MEMBER TO BE CONNECTED. REFER TO DRAWING 160 TL FOR TRUSS INFORMATION.

WEB LENGTH	WEB BRACING CHART
0' TO 7'9"	NO BRACING
7'9" TO 10'	1X4 "T" BRACE, SAME GRADE, SPECIES AS WEB MEMBER OR BETTER, AND 80% LENGTH OF WEB MEMBER. ATTACH WITH 6d NAILS AT 4" OC.
10' TO 14'	2X4 "T" BRACE, SAME GRADE, SPECIES AS WEB MEMBER OR BETTER, AND 80% LENGTH OF WEB MEMBER. ATTACH WITH 16d NAILS AT 4" OC.

\* PIGGYBACK SPECIAL PLATE

ATTACH TEETH TO THE PIGGYBACK AT THE TIME OF FABRICATION. ATTACH TO SUPPORTING TRUSS WITH (4) 0.120" X 1.375" NAILS PER FACE PER PLY. APPLY PIGGYBACK SPECIAL PLATE TO EACH TRUSS FACE AND SPACE 4' OC OR LESS.



**JULIUS LEE'S**  
CONS. ENGINEERS P.A.  
1400 SW 4th AVENUE  
DELRAY BEACH, FL 33444-2161

MAX LOADING  
55 PSF AT  
1.33 DUR. FAC.  
50 PSF AT  
1.25 DUR. FAC.  
47 PSF AT  
1.15 DUR. FAC.

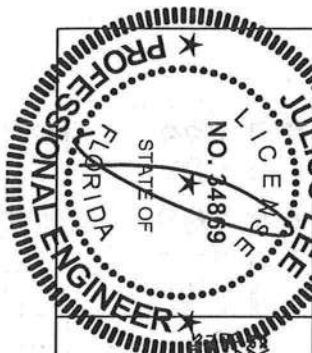
REF PIGGYBACK  
DATE 09/12/07  
DRWG/ITEK STD PIGGY  
-ENG JL

SPACING 24.0"

No. 34969  
STATE OF FLORIDA

REVIEWED

By Julius Lee at 11:59 am, Jun 11, 2008





TOP CHORD 2X4 SP #2 OR SPF #1/#2 OR BETTER.  
BOT CHORD 2X3(\*) OR 2X4 SP #2N OR SPF #1/#2 OR BETTER.  
WEBS 2X4 SP #3 OR BETTER.

\* 2X3 MAY BE RIPPED FROM A 2X6 (PITCHED OR SQUARE).

ATTACH EACH VALLEY TO EVERY SUPPORTING TRUSS WITH

(2) 16d BOX (0.135" X 3.5") NAILS TOE-NAILED FOR FBIC 2004.110 MPH, ASCE 7-02 110 MPH WIND OR (3) 16d FOR ASCE 7-02 130 MPH WIND. 15' MEAN HEIGHT, ENCLOSED BUILDING, EXP. C, RESIDENTIAL, WIND TC DL=6 PSF.

UNLESS SPECIFIED ON ENGINEER'S SEALED DESIGN, APPLY 1X4 "I"-BRACE, 80% LENGTH OF WEB, VALLEY WEB, SAME SPECIES AND GRADE OR BETTER, ATTACHED WITH 8d BOX (0.113" X 2.6") NAILS AT 6" OC, OR CONTINUOUS LATERAL BRACING, EQUALLY SPACED, FOR VERTICAL VALLEY WEBS GREATER THAN 7'9".

MAXIMUM VALLEY VERTICAL HEIGHT MAY NOT EXCEED 120'.

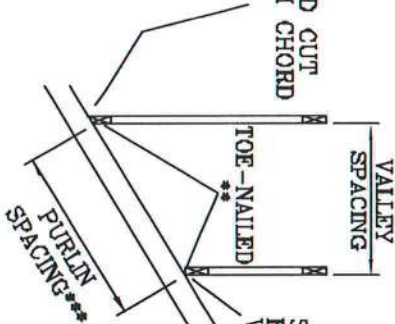
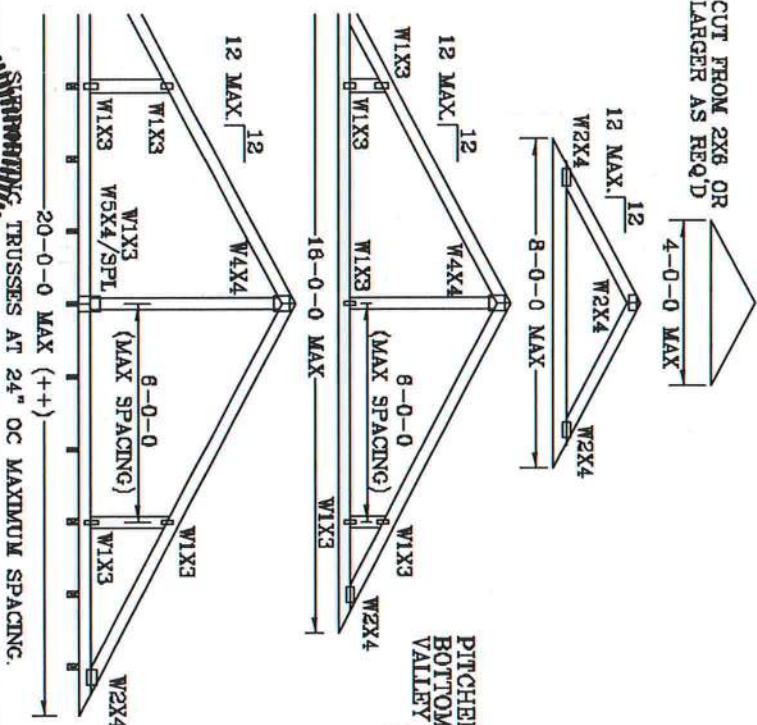
TOP CHORD OF TRUSS BENEATH VALLEY SET MUST BE BRACED WITH:  
PROPERLY ATTACHED, RATED SHEATHING APPLIED PRIOR TO VALLEY TRUSS  
INSTALLATION

OR  
PURLINS AT 24" OC OR AS OTHERWISE SPECIFIED ON ENGINEERS' SEALED DESIGN  
OR  
BY VALLEY TRUSSES USED IN LIEU OF PURLIN SPACING AS SPECIFIED ON  
ENGINEERS' SEALED DESIGN.

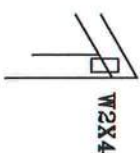
\*\*\* NOTE THAT THE PURLIN SPACING FOR BRACING THE TOP CHORD OF THE TRUSS BENEATH THE VALLEY IS MEASURED ALONG THE SLOPE OF THE TOP CHORD.

++ LARGER SPANS MAY BE BUILT AS LONG AS THE VERTICAL HEIGHT DOES NOT EXCEED 12'0".

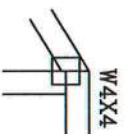
BOTTOM CHORD MAY BE SQUARE OR PITCHED CUT AS SHOWN



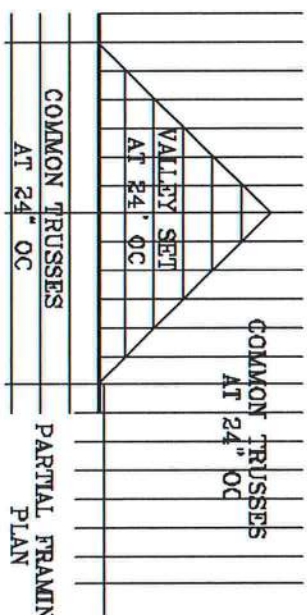
**SQUARE CUT  
BOTTOM CHORD  
VALLEY**



OPTIONAL STUB  
END DETAIL



### OPTIONAL HIP JOINT DETAIL



# PARTIAL FRAMING PLAN

**THIS DRAWING REPLACES DRAWING A105**

WORKING. THEY REQUIRE EXTENSIVE CARE, FABRICATING, HANDLING, SHIPPING, INSTALLING, AND MAINTENANCE. REFER TO NEXT-TO-BUILDING COMPONENT SAFETY INFORMATION, PUBLISHED BY THE STEEL ERECTING INSTITUTE, 560 CONVENT RD., SUITE 200, MADISON, WI 53709, AND AISC A308 TRUSS CONJOINT DETAILING IN MADISON, WI 53705, FOR SAFETY PRACTICES PRIOR TO PERFORMANCE. UNLESS OTHERWISE INDICATED, TOP CHORD SHALL HAVE PREDOMINANTLY ATTACHED MEMBERS, PANELS, AND BOTTOM CHORD SHALL HAVE A PREDOMINANTLY ATTACHED RIGID JOINTING.

JULIUS LEE'S  
CONS. ENGINEERS P.A.

1455 SW 4th Avenue  
Delray Beach, FL 33444-2161

TC LL	20	20	PSF	REF	VALLEY DETAIL
TC DL	7	15	PSF	DATE	11/26/03
BC DL	5	5	PSF	DRWG	VALTRUSS1103
BC LL	0	0	PSF	-ENG	JL
TOT. LD.	32	40	PSF		
DURFAC	1.25	1.25			
SPACING	24"				

# TOE-NAIL DETAIL

TOE-NAILS TO BE DRIVEN AT AN ANGLE OF APPROXIMATELY THIRTY DEGREES WITH THE PIECE AND STARTED APPROXIMATELY ONE-THIRD THE LENGTH OF THE NAIL FROM THE END OF THE MEMBER.

PER ANSI/AF&PA NDS-2001 SECTION 12.4.1 - EDGE DISTANCE, END DISTANCE, SPACING, EDGE DISTANCES, END DISTANCES AND SPACINGS FOR NAILS AND SPIKES SHALL BE SUFFICIENT TO PREVENT SPLITTING OF THE WOOD.

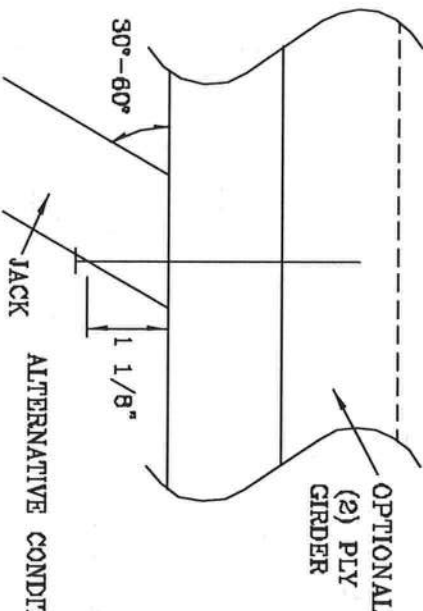
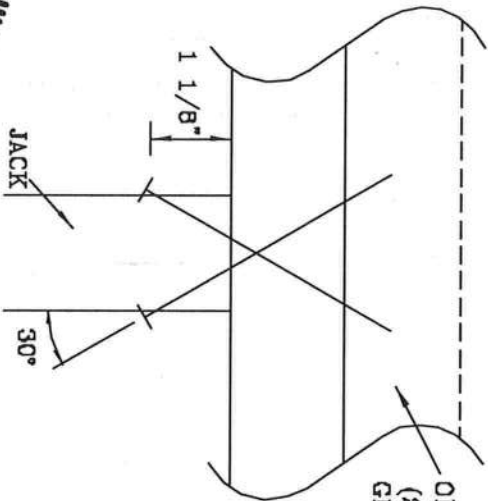
THE NUMBER OF TOE-NAILS TO BE USED IN A SPECIFIC APPLICATION IS DEPENDENT UPON PROPERTIES FOR THE CHORD SIZE, LUMBER SPECIES, AND NAIL TYPE. PROPER CONSTRUCTION PRACTICES AS WELL AS GOOD JUDGEMENT SHOULD DETERMINE THE NUMBER OF NAILS TO BE USED.

THIS DETAIL DISPLAYS A TOE-NAILED CONNECTION FOR JACK FRAMING INTO A SINGLE OR DOUBLE PLY SUPPORTING GIRDER.

MAXIMUM VERTICAL RESISTANCE OF 16d (0.162"x3.5") COMMON TOE-NAILS

NUMBER OF TOE-NAILS	SOUTHERN PINE		DOUGLAS FIR-LARCH		HEM-FIR		SPRUCE PINE FIR	
	1 PLY	2 PLYS	1 PLY	2 PLYS	1 PLY	2 PLYS	1 PLY	2 PLYS
2	187#	256#	181#	234#	156#	203#	154#	199#
3	286#	383#	271#	351#	234#	304#	230#	298#
4	394#	511#	381#	468#	312#	406#	307#	397#
5	493#	639#	452#	585#	390#	507#	384#	498#

ALL VALUES MAY BE MULTIPLIED BY APPROPRIATE DURATION OF LOAD FACTOR.



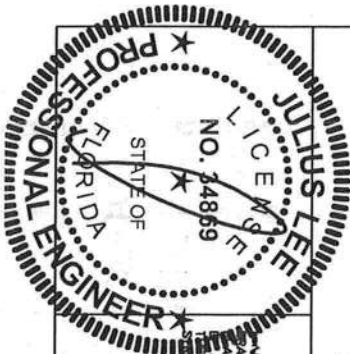
THIS DRAWING REPLACES DRAWING 784040

WARNING: TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO BCST 1-03 CHUANG COMPONENT SAFETY INFORMATION, PUBLISHED BY PTI TRUSS INSTITUTE, 388 YONGE RD. JR., SUITE 200, NATION, VA 20719 AND VICA (AIA) TRUSS COUNCIL, 16800 ENTERPRISE LN, NATION, VA 20719 FOR SAFETY PRACTICES PRIOR TO PERFORMING CONSTRUCTION. ALL TRUSSES SHALL HAVE A PERMANENTLY ATTACHED IDENTIFICATION TAG. ALL TRUSSES SHALL HAVE A PERMANENTLY ATTACHED IDENTIFICATION TAG.

JULIUS LEE'S  
CONS. ENGINEERS P.A.  
1400 BY 4TH AVENUE  
DELRAY BEACH, FL 33444-2161

TC LL PSF  
TC DL PSF  
BC DL PSF  
BC LL PSF  
TOT. LD. PSF  
DUR. FAC. 1.00  
SPACING

REF TOE-NAIL  
DATE 09/12/07  
DRWG C/TONTALL103  
-ENG JL



REVIEWED  
By Julius Lee at 11:58 am, Jun 11, 2008

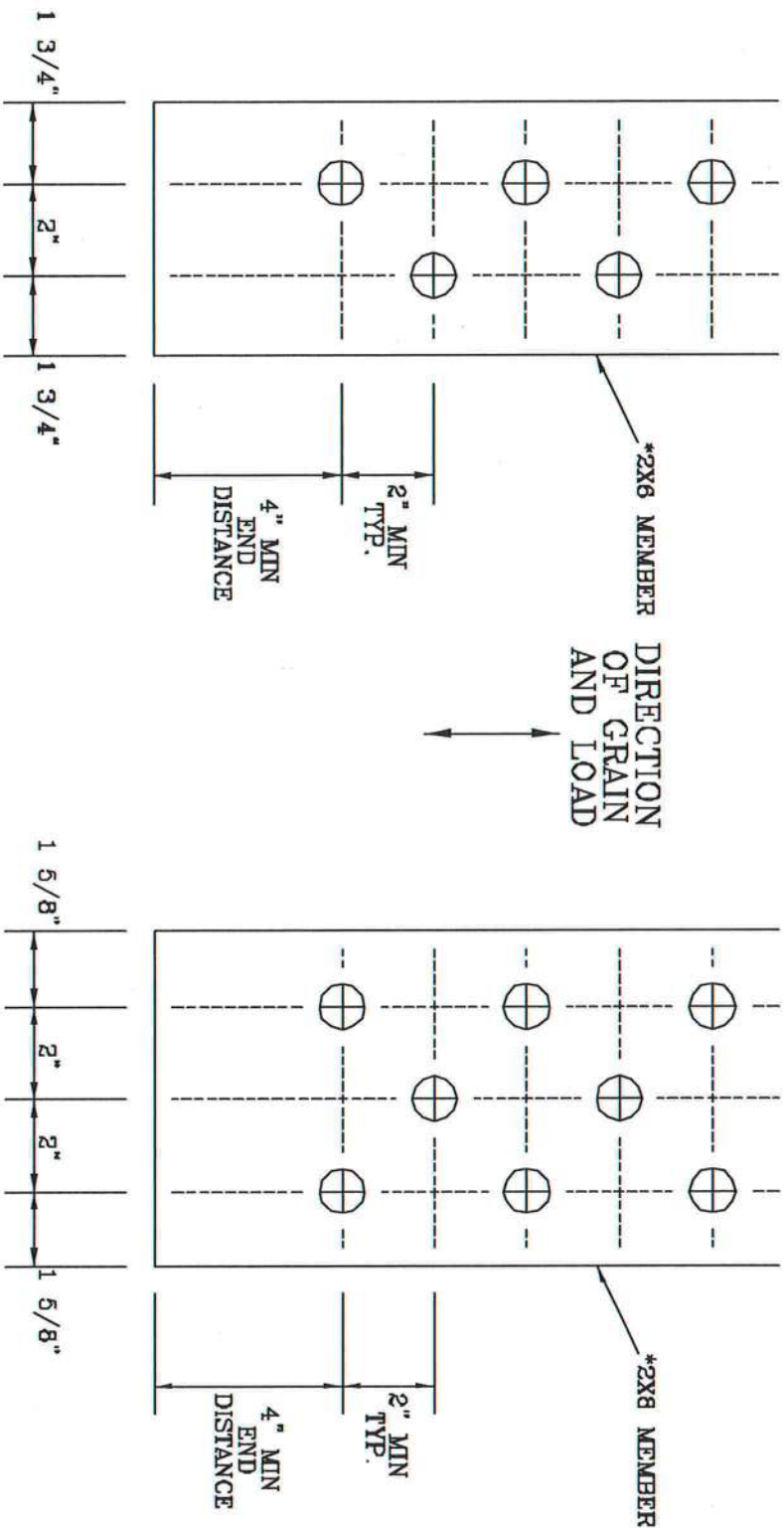
No. 34869  
STATE OF FLORIDA



# 1/2" DIAMETER BOLT SPACING FOR LOAD APPLIED PARALLEL TO GRAIN.

\* GRADE AND SPECIES AS SPECIFIED ON THE ALPINE DESIGN.  
BOLT HOLES SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN BOLT DIAMETER.

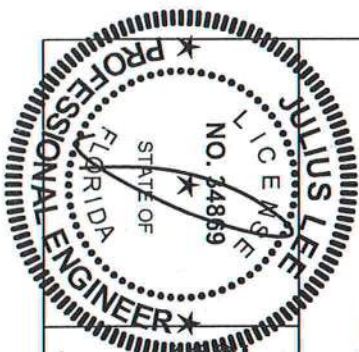
TYPICAL LOCATION OF 1/2" DIAMETER THRU BOLTS. BOLT QUANTITIES AS NOTED ON SEALED DESIGN MUST BE APPLIED IN ONE OF THE PATTERNS SHOWN BELOW.  
WASHERS REQUIRED UNDER BOLT HEAD AND NUT



2X6 DETAIL

2X8 DETAIL

THIS DRAWING REPLACES DRAWING A626.016



WARNING: TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO 2003 I-30 BUILDING COMPONENT SAFETY INFORMATION, PUBLISHED BY THE TRUSS ALIANCE, 3600 DOWNEY DR., SUITE 200, MADISON, WI 53719 AND AVOID TRUSS COLLAPSE. TRUSS FUNCTIONS, UNLESS OTHERWISE INDICATED, THE DESIGNER SHALL HAVE PROTECTED A PAVED STRUCTURAL PANELS AND EDITION OTHER SHALL HAVE A PAVED ATTACHED ROAD DESIGN.

REVIEWED

By Julius Lee at 11:59 am, Jun 11, 2008

JULIUS LEE'S  
CONS. ENGINEERS P.A.

1450 7th Avenue  
DELRAY BEACH, FL 33444-2161

No: 34869  
STATE OF FLORIDA

TC LL	PSF	REF	BOLT SPACING
TC DL	PSF	DATE	11/26/03
BC DL	PSF	DRWG	CNBOLTSF1103
BC LL	PSF	-ENG	JL
TOT. LD.	PSF		
DUR. FAC.			
SPACING			

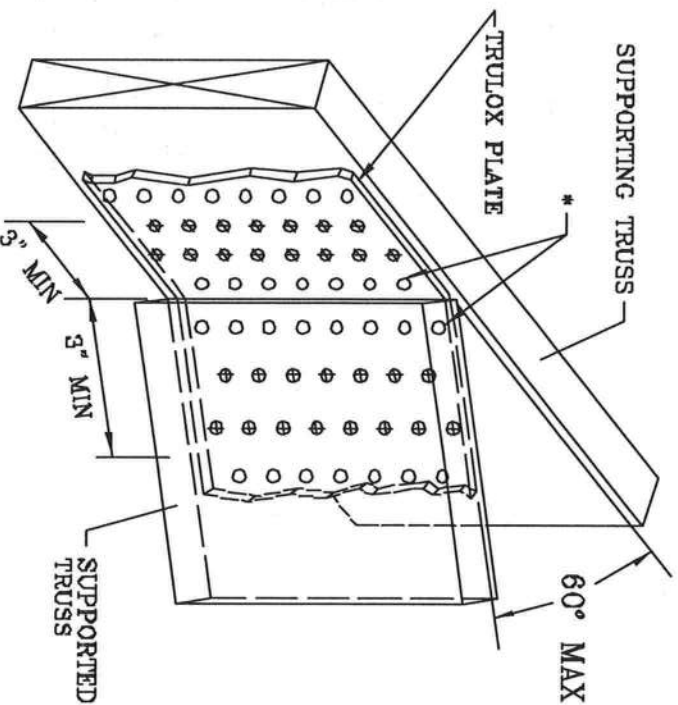
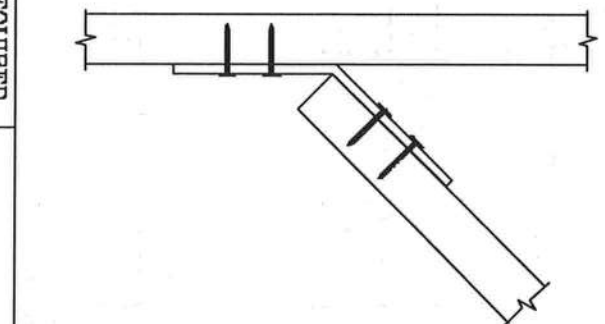
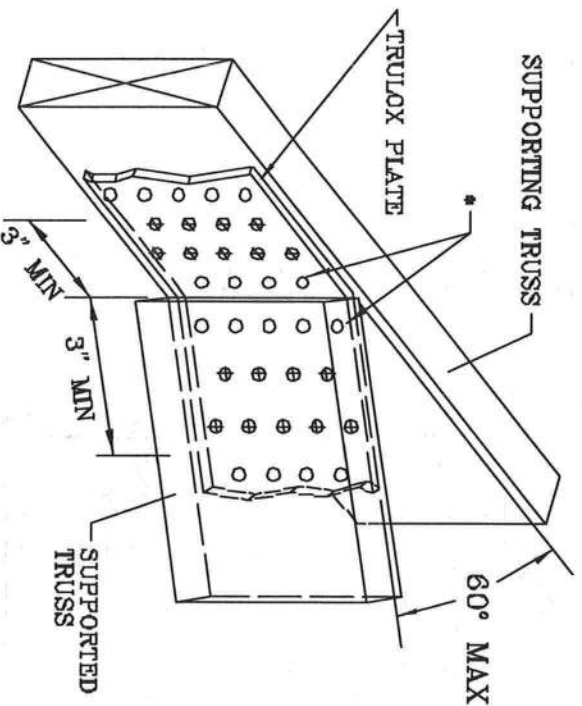
# TRULOX CONNECTION DETAIL

11 GAUGE (0.120" X 1.375") NAILS REQUIRED FOR TRULOX PLATE ATTACHMENT. FILL ROWS COMPLETELY WHERE SHOWN (Φ).

\* NAILS MAY BE OMITTED FROM THESE ROWS.

THIS DETAIL MAY BE USED WITH SO. PINE, DOUGLAS-FIR OR HEM-FIR CHORDS WITH A MINIMUM 1.00 DURATION OF LOAD OR SPRUCE-PINE-FIR CHORDS WITH A MINIMUM 1.15 DURATION OF LOAD. CHORD SIZE OF BOTH TRUSSES MUST EXCEED THE TRULOX PLATE WIDTH.

TRULOX PLATE IS CENTERED ON THE CHORDS AND BENT BETWEEN NAIL ROWS.  
REFER TO ENGINEER'S SEALED DESIGN REFERENCING THIS DETAIL FOR LUMBER, PLATES, AND OTHER INFORMATION NOT SHOWN.



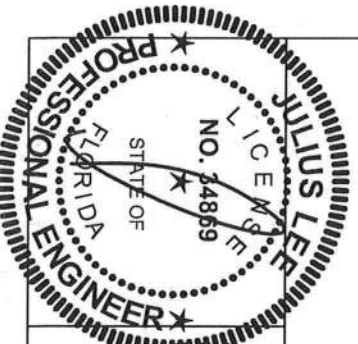
MINIMUM 3X6 TRULOX PLATE

TRULOX PLATE SIZE	REQUIRED NAILS PER TRUSS	MAXIMUM LOAD UP OR DOWN
3X6	9	350#
6X6	15	990#

MINIMUM 5X6 TRULOX PLATE

REVIEWED  
By Julius Lee at 11:58 am, Jun 11, 2008

THIS DRAWING REPLACES DRAWINGS 1,158,989 1,158,989/R  
1,154,844 1,152,217 1,152,017 1,159,154 & 1,151,524



WARNING: TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND MAINTAINING. REFER TO 2001-1-03 BUILDING DEPARTMENT SAFETY DEPARTMENT, PUBLISHED BY THE TRUSS MANUFACTURERS ASSOCIATION, 588 DOWNSIDE DR., SUITE 100, MARIETTA, GA 30067. TRUSS CHORDS MUST BE PROTECTED FROM DAMAGE. UNLESS OTHERWISE INDICATED, THE CHORD SHALL HAVE PROPERLY ATTACHED RIGID PANELS AND BENT CHORD SHALL HAVE A PROPERLY ATTACHED RIGID CEILING.

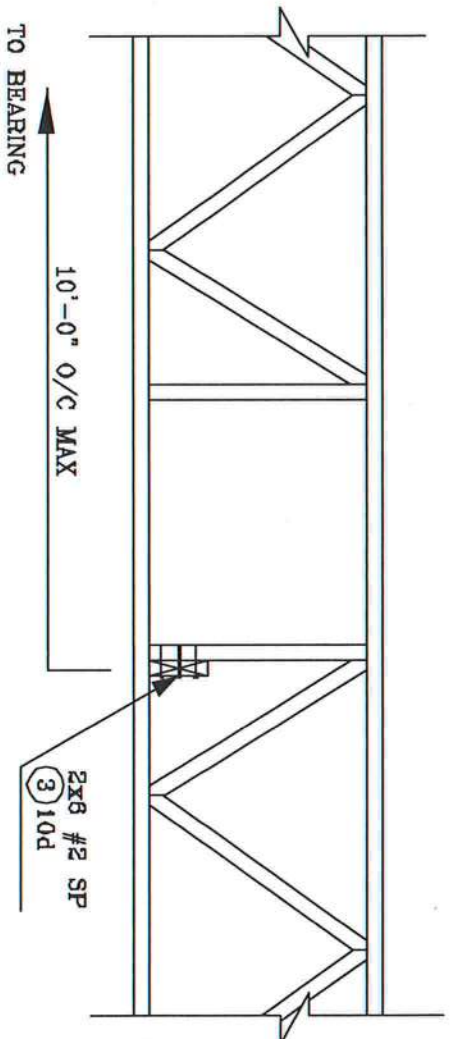
JULIUS LEE'S  
CONS. ENGINEERS P.A.

1455 SW 4th AVENUE  
DELRAY BEACH, FL 33444-3101

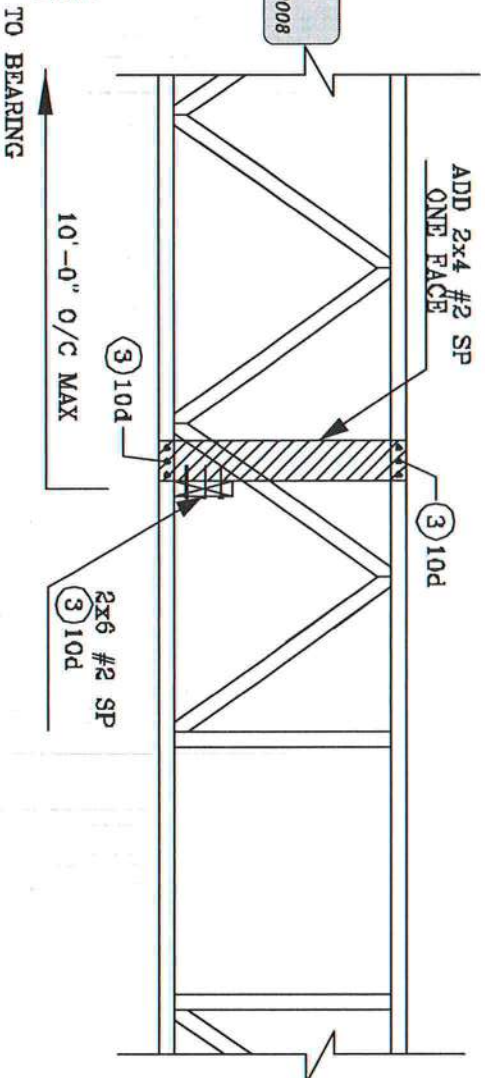
No. 34869  
STATE OF FLORIDA

REF	TRULOX
DATE	11/26/03
DRWG	CNTRULOX1103
-ENG	JL

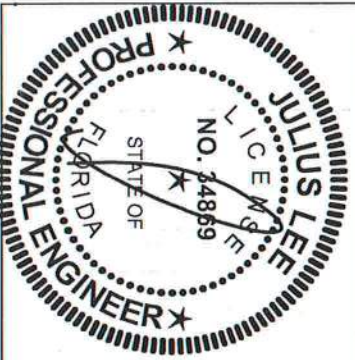
# STRONG BACK DETAIL SYSTEM-42 OR FLAT TRUSS



## ALTERNATE DETAIL FOR STRONG BACK WITH VERTICAL NOT LINING UP



**REVIEWED**  
By Julius Lee at 11:58 am, Jun 11, 2008



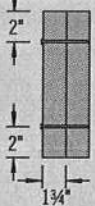
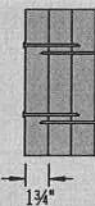
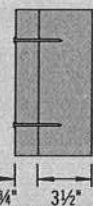

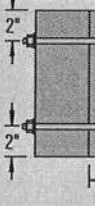
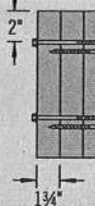
**JULIUS LEE'S**  
CONS. ENGINEERS P.A.  
1456 SW 4th AVENUE  
MIAMI BEACH, FL 33444-2161

No. 34869  
STATE OF FLORIDA



# MULTIPLE-MEMBER CONNECTIONS FOR SIDE-LOADED BEAMS

## Maximum Uniform Load Applied to Either Outside Member (PLF)

Connector Type	Number of Rows	Connector On-Center Spacing	Connector Pattern					
			Assembly A	Assembly B	Assembly C	Assembly D	Assembly E	Assembly F
								
			3 1/2" 2-ply	5 1/4" 3-ply	5 1/4" 2-ply	7" 3-ply	7" 2-ply	7" 4-ply
10d (0.128" x 3") Nail <sup>(1)</sup>	2	12"	370	<b>280</b>	280	<b>245</b>		
	3	12"	555	<b>415</b>	415	<b>370</b>		
1/2" A307 Through Bolts <sup>(2)(4)</sup>	2	24"	505	380	520	465	860	340
		19.2"	635	475	655	580	1,075	425
		16"	760	570	785	695	1,290	505
SDS 1/4" x 3 1/2" <sup>(4)</sup>	2	24"	680	<b>510</b>	510	<b>455</b>		
		19.2"	850	<b>640</b>	640	<b>565</b>		
		16"	1,020	<b>765</b>	765	<b>680</b>		
SDS 1/4" x 6" <sup>(3)(4)</sup>	2	24"				<b>455</b>	<b>465</b>	<b>455</b>
		19.2"				<b>565</b>	<b>580</b>	<b>565</b>
		16"				<b>680</b>	<b>695</b>	<b>680</b>
USP WS35 <sup>(4)</sup>	2	24"	480	<b>360</b>	360	<b>320</b>		
		19.2"	600	<b>450</b>	450	<b>400</b>		
		16"	715	<b>540</b>	540	<b>480</b>		
USP WS6 <sup>(3)(4)</sup>	2	24"				<b>350</b>	<b>525</b>	<b>350</b>
		19.2"				<b>440</b>	<b>660</b>	<b>440</b>
		16"				<b>525</b>	<b>790</b>	<b>525</b>
3 3/8" TrussLok <sup>(4)</sup>	2	24"	635	<b>475</b>	475	<b>425</b>		
		19.2"	795	<b>595</b>	595	<b>530</b>		
		16"	955	<b>715</b>	715	<b>635</b>		
5" TrussLok <sup>(4)</sup>	2	24"		<b>500</b>	500	<b>445</b>	<b>480</b>	<b>445</b>
		19.2"		<b>625</b>	625	<b>555</b>	<b>600</b>	<b>555</b>
		16"		<b>750</b>	750	<b>665</b>	<b>725</b>	<b>665</b>
6 3/4" TrussLok <sup>(4)</sup>	2	24"				445	620	445
		19.2"				555	770	555
		16"				665	925	665

(1) Nailed connection values may be doubled for 6" on-center or tripled for 4" on-center nail spacing.

(2) Washers required. Bolt holes to be 1/16" maximum.

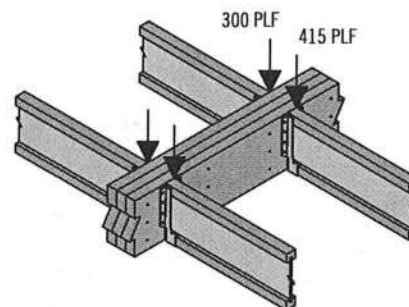
(3) 6" SDS or WS screws can be used with Parallam® PSL and Microllam® LVL, but are not recommended for TimberStrand® LSL.

(4) 24" on-center bolted and screwed connection values may be doubled for 12" on-center spacing.

## General Notes

- Connections are based on NDS® 2005 or manufacturer's code report.
- Use specific gravity of 0.5 when designing lateral connections.
- Values listed are for 100% stress level. Increase 15% for snow-loaded roof conditions or 25% for non-snow roof conditions, where code allows.
- Bold Italic** cells indicate **Connector Pattern** must be installed on both sides. Stagger fasteners on opposite side of beam by 1/2 the required **Connector Spacing**.
- Verify adequacy of beam in allowable load tables on pages 16–33.
- 7" wide beams should be side-loaded only when loads are applied to both sides of the members (to minimize rotation).
- Minimum end distance for bolts and screws is 6".
- Beams wider than 7" require special consideration by the design professional.

## Uniform Load Design Example



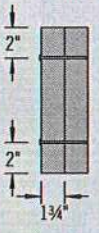
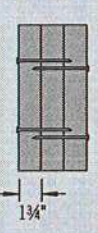




First, check the allowable load tables on pages 16–33 to verify that three pieces can carry the total load of 715 plf with proper live load deflection criteria. Maximum load applied to either outside member is 415 plf. For a 3-ply 1 3/4" assembly, two rows of 10d (0.128" x 3") nails at 12" on-center is good for only 280 plf. Therefore, use three rows of 10d (0.128" x 3") nails at 12" on-center (good for 415 plf).

### Alternates:

Two rows of 1/2" bolts or SDS 1/4" x 3 1/2" screws at 19.2" on-center.

# MULTIPLE-MEMBER CONNECTIONS FOR SIDE-LOADED BEAMS

## Point Load—Maximum Point Load Applied to Either Outside Member (lbs)

Connector Type	Number of Connectors	Connector Pattern					
		Assembly A	Assembly B	Assembly C	Assembly D	Assembly E	Assembly F
							
		3 1/2" 2-ply	5 1/4" 3-ply	5 1/4" 2-ply	7" 3-ply	7" 2-ply	7" 4-ply
10d (0.128" x 3") Nail	6	1,110	835	835	740		
	12	2,225	1,670	1,670	1,485		
	18	3,335	2,505	2,505	2,225		
	24	4,450	3,335	3,335	2,965		
SDS Screws 1/4" x 3 1/2" or WS35 1/4" x 6" or WS6 <sup>(1)</sup>	4	1,915	1,435 <sup>(4)</sup>	1,435	1,275	1,860 <sup>(2)</sup>	1,405 <sup>(2)</sup>
	6	2,870	2,150 <sup>(4)</sup>	2,150	1,915	2,785 <sup>(2)</sup>	2,110 <sup>(2)</sup>
	8	3,825	2,870 <sup>(4)</sup>	2,870	2,550	3,715 <sup>(2)</sup>	2,810 <sup>(2)</sup>
3 3/8" or 5" TrussLok™	4	2,545	1,910 <sup>(4)</sup>	1,910	1,695	1,925 <sup>(2)</sup>	1,775 <sup>(2)</sup>
	6	3,815	2,860 <sup>(4)</sup>	2,860	2,545	2,890 <sup>(2)</sup>	2,665 <sup>(2)</sup>
	8	5,090	3,815 <sup>(4)</sup>	3,815	3,390	3,855 <sup>(2)</sup>	3,550 <sup>(2)</sup>

(1) 6" SDS or WS screws can be used with Parallam® PSL and Microllam® LVL, but are not recommended for TimberStrand® LSL.

See General Notes on page 38

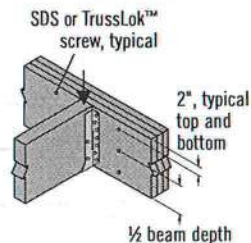
(2) 6" long screws required.

(3) 5" long screws required.

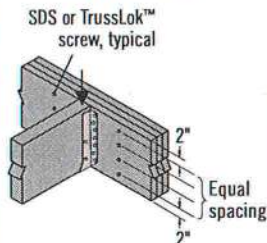
(4) 3 1/2" and 3 3/8" long screws must be installed on both sides.

## Connections

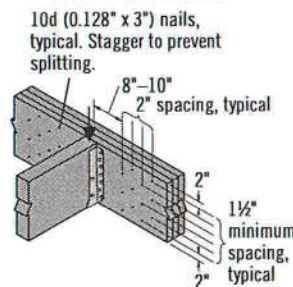
### 4 or 6 or Screw Connection



### 8 Screw Connection

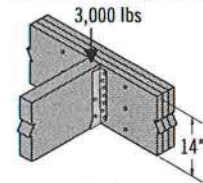


### Nail Connection



There must be an equal number of nails on each side of the connection

## Point Load Design Example



First, verify that a 3-ply 1 3/4" x 14" beam is capable of supporting the 3,000 lb point load as well as all other loads applied. The 3,000 lb point load is being transferred to the beam with a face mount hanger. For a 3-ply 1 3/4" assembly, eight 3 3/8" TrussLok™ screws are good for 3,815 lbs with a face mount hanger.

# MULTIPLE-MEMBER CONNECTIONS FOR TOP-LOADED BEAMS

## 1 3/4" Wide Pieces

- Minimum of three rows of 10d (0.128" x 3") nails at 12" on-center.
- Minimum of four rows of 10d (0.128" x 3") nails at 12" on-center for 14" or deeper.
- If using 12d-16d (0.148"-0.162" diameter) nails, the number of nailing rows may be reduced by one.
- Minimum of two rows of SDS, WS, or TrussLok™ screws at 16" on-center. Use 3 3/8" minimum length with two or three plies; 5" minimum for 4-ply members. 6" SDS and WS screws are not recommended for use with TimberStrand® LSL. For 3- or 4-ply members, connectors must be installed

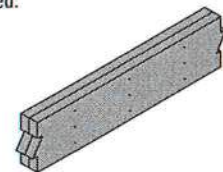
on both sides. Stagger fasteners on opposite side of beam by 1/2 of the required connector spacing.

- Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams.

## 3 1/2" Wide Pieces

- Minimum of two rows of SDS, WS, or TrussLok™ screws, 5" minimum length, at 16" on-center. 6" SDS and WS screws are not recommended for use with TimberStrand® LSL. Connectors must be installed on both sides. Stagger fasteners on opposite side of beam by 1/2 of the required connector spacing.

- Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams.
- Minimum of two rows of 1/2" bolts at 24" on-center staggered.



Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 7"

L6