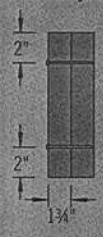
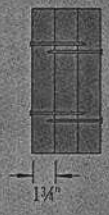
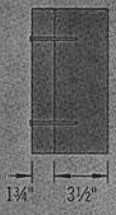
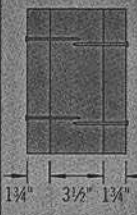
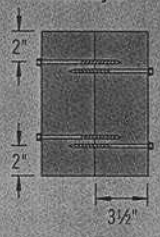
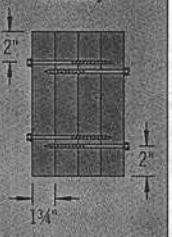
Point Load—Maximum Point Load Applied to Either Outside Member (lbs)

Connector Type	Number of Connectors	Connector Pattern: Assembly A	Assembly B	Assembly C	Assembly D	Assembly E	Assembly F
							
		3½" 2-ply	5¼" 3-ply	5¼" 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 ¼" x 3½" or WS35 ¼" x 6" or WS6(1)	4	1,915	1,435(4)	1,435	*1,275*	*1,860*(2)	*1,405*(2)
	6	2,870	2,150 (4)	2,150	*1,915*	*2,785*(2)	*2,110*(2)
	8	3,825	2,870 (4)	2,870	*2,550*	*3,715*(2)	*2,810*(2)
3⅜" or 5" TrussLok™	4	2,545	1,910 (4)	1,910	*1,695*	*1,925*(3)	*1,775*(3)
	6	3,815	2,860 (4)	2,860	*2,545*	*2,890*(3)	*2,665*(3)
	8	5,090	3,815 (4)	3,815	*3,390*	*3,855*(3)	*3,550*(3)

(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

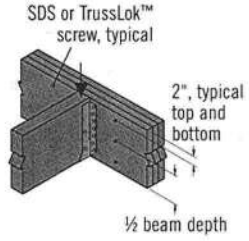
(2) 6" long screws required.

(3) 5" long screws required.

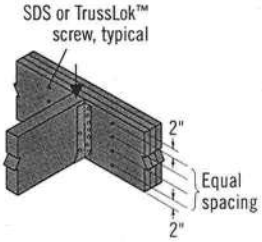
(4) 3½" and 3⅜" long screws must be installed on both sides.

Connections

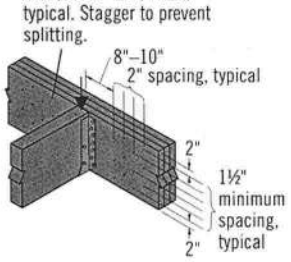
4 or 6 or Screw Connection



8 Screw Connection

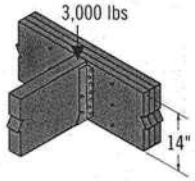


Nail Connection



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

Point Load Design Example



First, verify that a 3-ply 1¾" 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 1¾" assembly, eight 3⅜" TrussLok™ screws are good for 3,815 lbs with a face mount hanger.

MULTIPLE-MEMBER CONNECTIONS FOR TOP-LOADED BEAMS

1¾" 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 3⅜" 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 ½ of the required connector spacing.
- Load must be applied evenly across entire beam width. Otherwise, use connections for side-loaded beams.

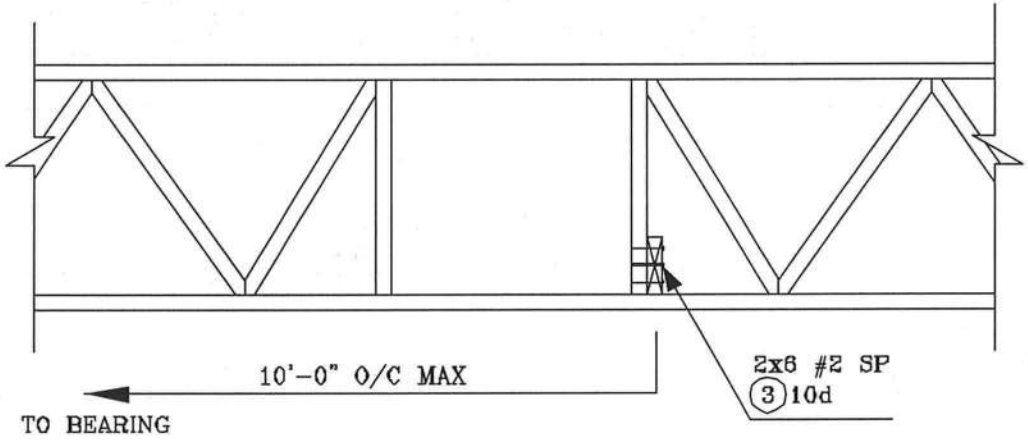
3½" Wide Pieces

- 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 ½ 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 ½" bolts at 24" on-center staggered.

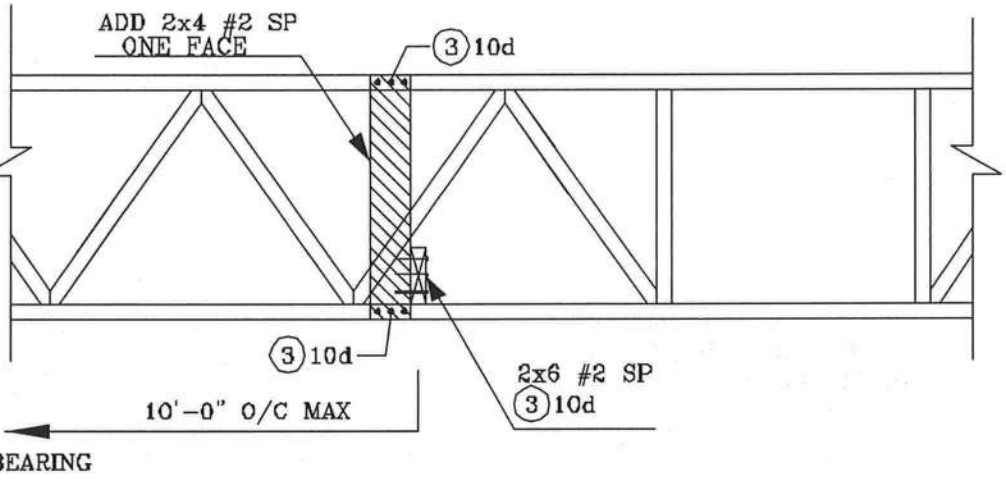
Multiple pieces can be nailed or bolted together to form a header or beam of the required size, up to a maximum width of 7"

L6

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
LICENSE
NO. 34869
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

JULIUS LEE'S
CONS. ENGINEERS P.A.
1455 SW 4th AVENUE
DELRAY BEACH, FL 33444-2161

No: 34869
STATE OF FLORIDA

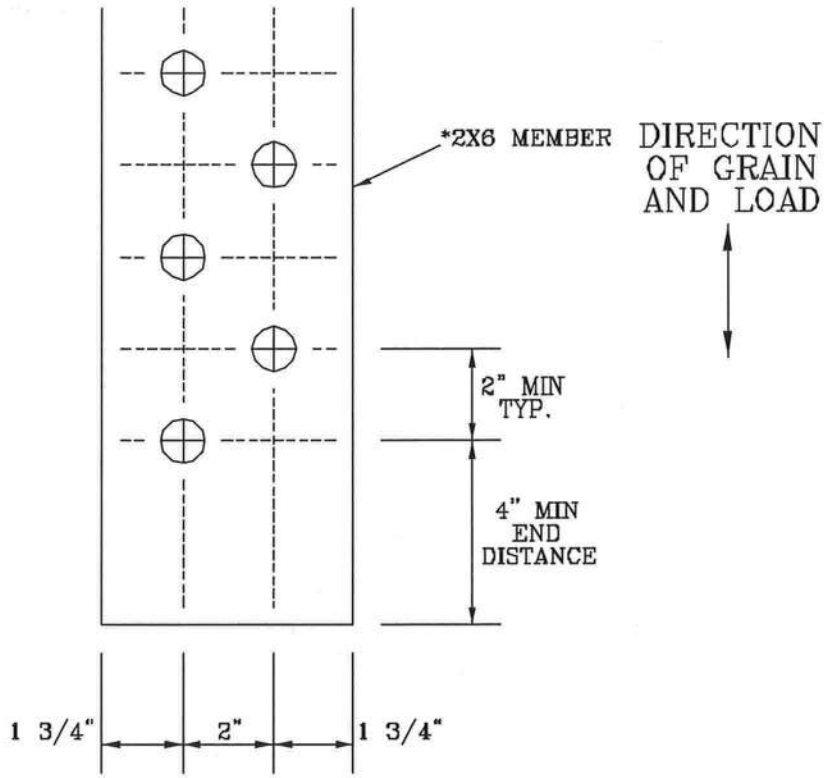
1/2" DIAMETER BOLT SPACING FOR LOAD APPLIED PARALLEL TO GRAIN.

* GRADE AND SPECIES AS SPECIFIED ON THE ALPINE DESIGN.

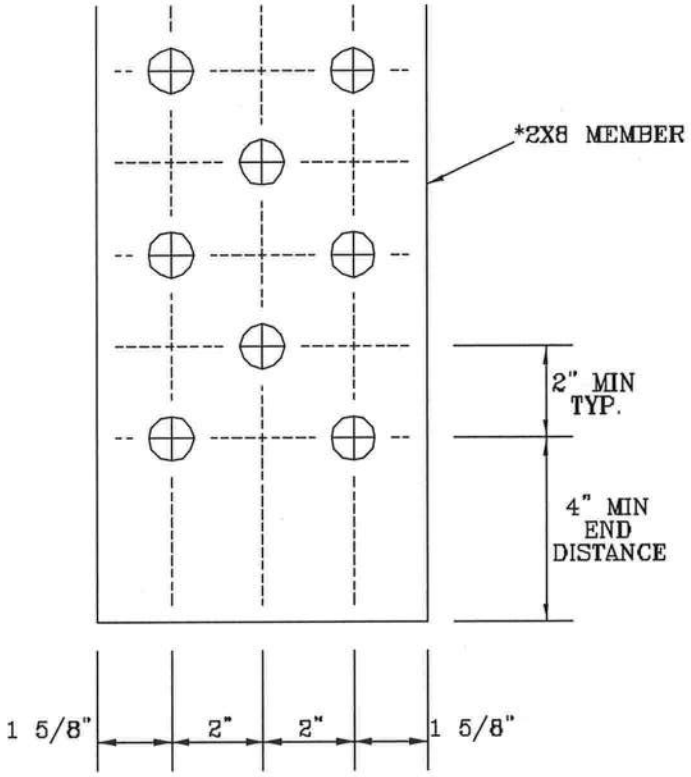
BOLT HOLES SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN BOLT DIAMETER.

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 A628,016

JULIUS LEE LICENSE NO. 34869 STATE OF FLORIDA PROFESSIONAL ENGINEER

WARNING TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO BCSI 1-03 (BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS PLATE INSTITUTE, 583 D'ONOFRIO DR., SUITE 200, MADISON, WI 53719) AND WTCA (WOOD TRUSS COUNCIL OF AMERICA, 6300 ENTERPRISE LN, 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 RIGID CEILING.

REVIEWED
By julius lee at 11:59 am, Jun 11, 2008

JULIUS LEE'S
CONS. ENGINEERS P.A.
1455 SW 4th AVENUE
DELRAY BEACH, FL 33444-2161

No: 34869
STATE OF FLORIDA

TC LL	PSF	REF BOLT SPACING
TC DL	PSF	DATE 11/26/08
BC DL	PSF	DRWG CNBOLTSP1103
BC LL	PSF	-ENG JL
TOT. LD.	PSF	
DUR. FAC.		
SPACING		

VALLEY TRUSS DETAIL

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 FBC 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=5 PSF.

UNLESS SPECIFIED ON ENGINEER'S SEALED DESIGN, APPLY 1X4 "T"-BRACE, 80% LENGTH OF WEB, VALLEY WEB, SAME SPECIES AND GRADE OR BETTER, ATTACHED WITH 8d BOX (0.113" X 2.5") NAILS AT 6" OC, OR CONTINUOUS LATERAL BRACING, EQUALLY SPACED, FOR VERTICAL VALLEY WEBS GREATER THAN 7'9".

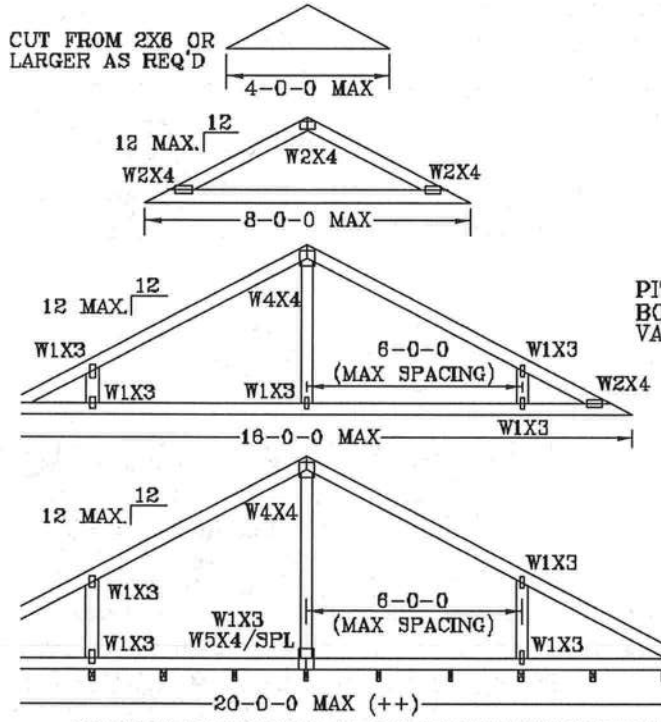
MAXIMUM VALLEY VERTICAL HEIGHT MAY NOT EXCEED 12'0".

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.

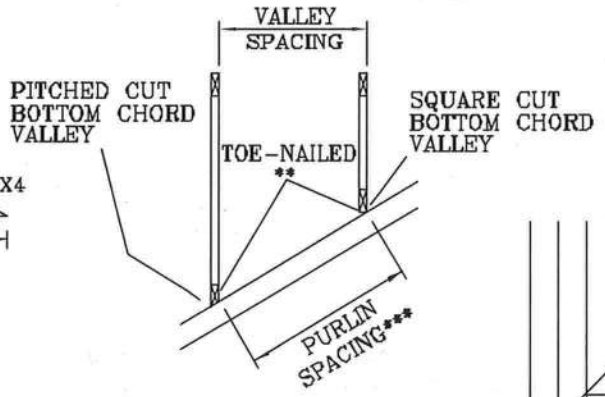
*** NOTE THAT THE PURLIN SPACING FOR BRACING THE TOP CHORD OF THE TRUSS BENEATH THE VALLEY IS MEASURED ALONG THE SLOPE OF THE TOP CHORD.

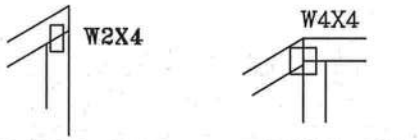
++ LARGER SPANS MAY BE BUILT AS LONG AS THE VERTICAL HEIGHT DOES NOT EXCEED 12'0".

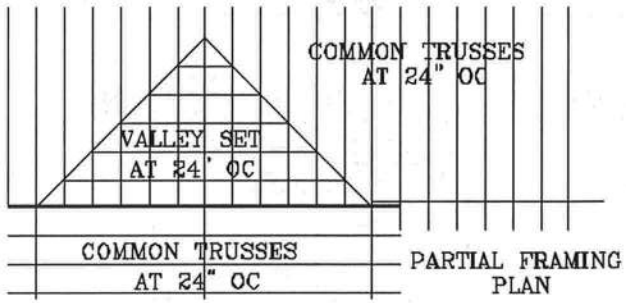
BOTTOM CHORD MAY BE SQUARE OR PITCHED CUT AS SHOWN.



SUPPORTING TRUSSES AT 24" OC MAXIMUM SPACING.







THIS DRAWING REPLACES DRAWING A105

JULIUS LEE LICENSE NO. 34869 STATE OF FLORIDA PROFESSIONAL ENGINEER

WARNING: TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO BCSI (1-03 BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS PLATE INSTITUTE, 583 D'ONOFRIO DR., SUITE 200, MADISON, WI. 53719) AND WTCA (WOOD TRUSS COUNCIL OF AMERICA, 6300 ENTERPRISE LN, 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 RIGID CEILING.

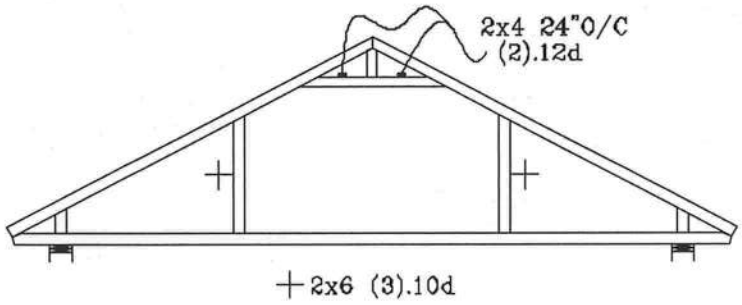
REVIEWED
By julius lee at 11:59 am, Jun 11, 2008

JULIUS LEE'S
CONS. ENGINEERS P.A.
1455 SW 4th AVENUE
DELRAY BEACH, FL 33444-2161

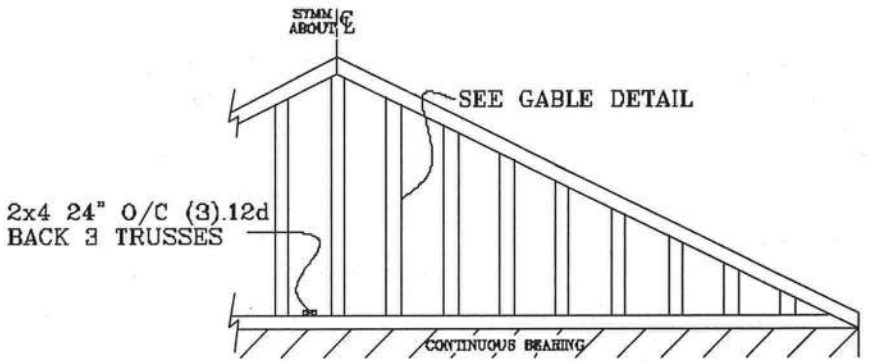
No: 34869
STATE OF FLORIDA

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"		

TYPICAL ATTIC TRUSS BRACING

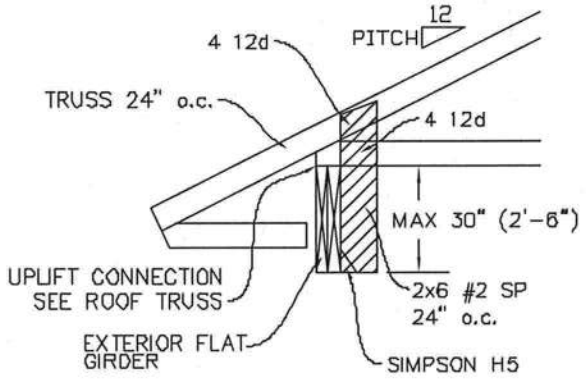


GABLE END TRUSS DETAIL



MINIMUM BC BRACING ON GABLE TRUSS. OTHER PERMANENT BRACING DESIGNS BY ARCHITECT OR EOR

TYPICAL ALTERNATE BRACING DETAIL FOR EXTERIOR FLAT GIRDER TRUSS



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By julius lee at 11:59 am, Jun 11, 2008

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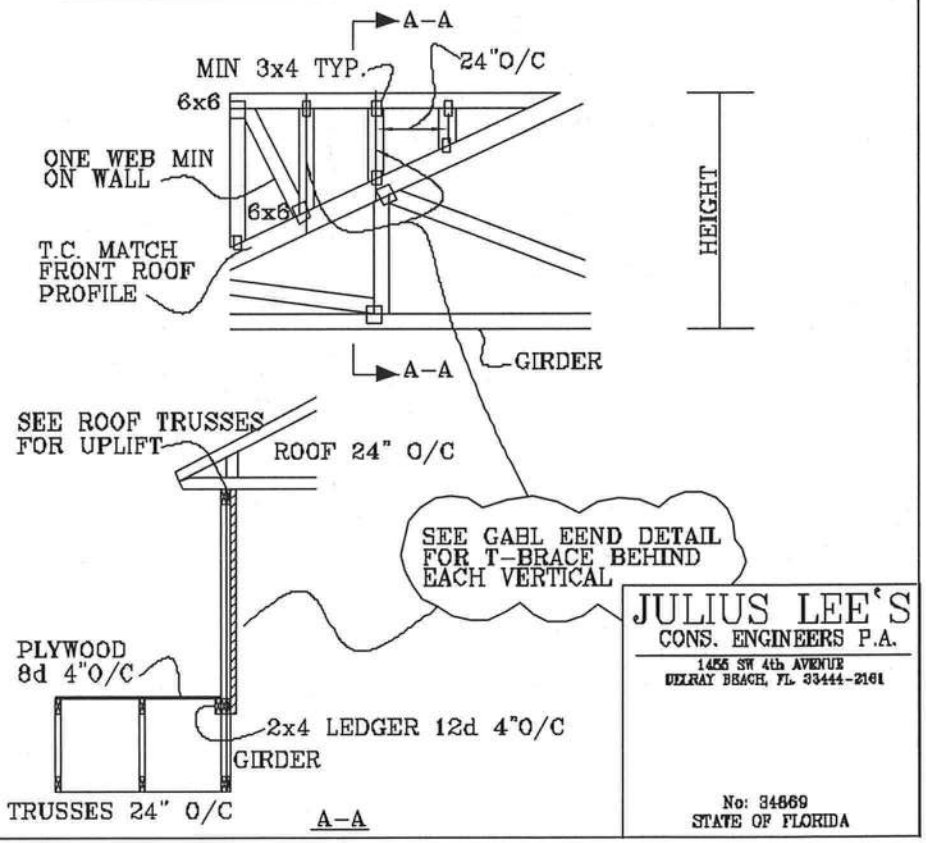
LICENSE
NO. 34869
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

TYPICAL WALL GIRDER VERTICAL WEB BRACING DETAIL



JULIUS LEE'S
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1455 SW 4th AVENUE
DELRAY BEACH, FL 33444-2161

No: 34869
STATE OF FLORIDA

ASCE 7-02: 130 MPH WIND SPEED, 15' MEAN HEIGHT, ENCLOSED, I = 1.00, EXPOSURE C

MAX GABLE VERTICAL LENGTH

2X4 GABLE VERTICAL SPACING	SPECIES	BRACE GRADE	NO BRACES	(1) 1X4 "L" BRACE * GROUP A	(1) 1X4 "L" BRACE * GROUP B	(1) 2X4 "L" BRACE * GROUP A	(1) 2X4 "L" BRACE * GROUP B	(2) 2X4 "L" BRACE ** GROUP A	(2) 2X4 "L" BRACE ** GROUP B	(1) 2X6 "L" BRACE * GROUP A	(1) 2X6 "L" BRACE * GROUP B	(2) 2X6 "L" BRACE ** GROUP A	(2) 2X6 "L" BRACE ** GROUP B
24" O.C.	SPF HF	#1 / #2	3' 4"	5' 10"	6' 0"	6' 11"	7' 1"	8' 3"	8' 6"	10' 10"	11' 2"	12' 11"	13' 3"
		#3	3' 3"	4' 11"	4' 11"	6' 6"	6' 6"	8' 3"	8' 3"	10' 1"	10' 1"	12' 11"	12' 11"
		STUD	3' 3"	4' 11"	4' 11"	6' 5"	6' 5"	8' 3"	8' 3"	10' 0"	10' 0"	12' 11"	12' 11"
		STANDARD	3' 3"	4' 2"	4' 2"	5' 6"	5' 6"	7' 5"	7' 5"	8' 8"	8' 8"	11' 6"	11' 6"
	SP DFL	#1	3' 8"	5' 10"	6' 3"	6' 11"	7' 5"	8' 3"	8' 11"	10' 10"	11' 8"	12' 11"	13' 11"
		#2	3' 7"	5' 10"	6' 3"	6' 11"	7' 5"	8' 3"	8' 11"	10' 10"	11' 8"	12' 11"	13' 11"
		#3	3' 6"	5' 0"	5' 0"	6' 8"	6' 8"	8' 3"	8' 8"	10' 4"	10' 4"	12' 11"	13' 7"
		STUD	3' 6"	5' 0"	5' 0"	6' 7"	6' 7"	8' 3"	8' 8"	10' 3"	10' 3"	12' 11"	13' 7"
		STANDARD	3' 4"	4' 3"	4' 3"	5' 8"	5' 8"	7' 8"	7' 8"	8' 10"	8' 10"	12' 0"	12' 0"
16" O.C.	SPF HF	#1 / #2	3' 10"	6' 8"	6' 10"	7' 11"	8' 1"	9' 6"	9' 8"	12' 5"	12' 9"	14' 0"	14' 0"
		#3	3' 9"	6' 0"	6' 0"	7' 11"	7' 11"	9' 5"	9' 5"	12' 4"	12' 4"	14' 0"	14' 0"
		STUD	3' 9"	6' 0"	6' 0"	7' 11"	7' 11"	9' 5"	9' 5"	12' 4"	12' 4"	14' 0"	14' 0"
		STANDARD	3' 9"	5' 2"	5' 2"	6' 10"	6' 10"	9' 2"	9' 2"	10' 7"	10' 7"	14' 0"	14' 0"
	SP DFL	#1	4' 3"	6' 8"	7' 2"	7' 11"	8' 6"	9' 5"	10' 2"	12' 5"	13' 5"	14' 0"	14' 0"
		#2	4' 2"	6' 8"	7' 2"	7' 11"	8' 6"	9' 5"	10' 2"	12' 5"	13' 5"	14' 0"	14' 0"
		#3	4' 0"	6' 2"	6' 2"	7' 11"	8' 2"	9' 5"	9' 11"	12' 5"	12' 8"	14' 0"	14' 0"
		STUD	4' 0"	6' 1"	6' 1"	7' 11"	8' 1"	9' 5"	9' 11"	12' 5"	12' 8"	14' 0"	14' 0"
		STANDARD	3' 10"	5' 3"	5' 3"	6' 11"	6' 11"	9' 4"	9' 4"	10' 10"	10' 10"	14' 0"	14' 0"
12" O.C.	SPF HF	#1 / #2	4' 3"	7' 4"	7' 7"	8' 9"	8' 11"	10' 6"	10' 8"	13' 8"	14' 0"	14' 0"	14' 0"
		#3	4' 2"	6' 11"	6' 11"	8' 9"	8' 9"	10' 5"	10' 5"	13' 8"	13' 8"	14' 0"	14' 0"
		STUD	4' 2"	6' 11"	6' 11"	8' 9"	8' 9"	10' 5"	10' 5"	13' 8"	13' 8"	14' 0"	14' 0"
		STANDARD	4' 2"	6' 11"	6' 11"	7' 10"	7' 10"	10' 5"	10' 5"	12' 3"	12' 3"	14' 0"	14' 0"
	SP DFL	#1	4' 8"	7' 4"	7' 11"	8' 9"	9' 5"	10' 5"	11' 2"	13' 8"	14' 0"	14' 0"	14' 0"
		#2	4' 7"	7' 4"	7' 11"	8' 9"	9' 5"	10' 5"	11' 2"	13' 8"	14' 0"	14' 0"	14' 0"
		#3	4' 4"	7' 2"	7' 2"	8' 9"	9' 2"	10' 5"	10' 11"	13' 6"	14' 0"	14' 0"	14' 0"
		STUD	4' 4"	7' 1"	7' 1"	8' 9"	9' 2"	10' 5"	10' 11"	13' 8"	14' 0"	14' 0"	14' 0"
		STANDARD	4' 3"	6' 1"	6' 1"	8' 0"	8' 0"	10' 5"	10' 8"	12' 6"	12' 6"	14' 0"	14' 0"

BRACING GROUP SPECIES AND GRADES:

GROUP A:

SPRUCE-PINE-FIR	
#1 / #2	STANDARD
#3	STUD

HEM-FIR	
#2	STUD
#3	STANDARD

DOUGLAS FIR-LARCH
#3
STUD
STANDARD

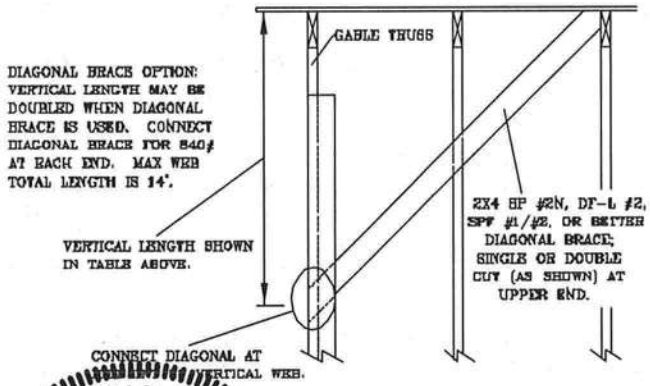
SOUTHERN PINE
#3
STUD
STANDARD

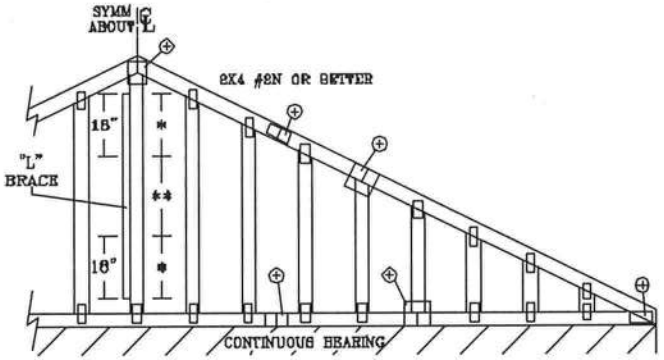
GROUP B:

HEM-FIR
#1 & BTR
#1

SOUTHERN PINE
#1
#2

DOUGLAS FIR-LARCH
#1
#2





REFER TO CHART ABOVE FOR MAX GABLE VERTICAL LENGTH.

GABLE TRUSS DETAIL NOTES:

LIVE LOAD DEFLECTION CRITERIA IS L/240.

PROVIDE UPLIFT CONNECTIONS FOR 136 PLF OVER CONTINUOUS BEARING (5 PSF TC DEAD LOAD).

GABLE END SUPPORTS LOAD FROM 4' 0" OUTLOOKERS WITH 2' 0" OVERHANG, OR 12" PLYWOOD OVERHANG.

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 6" O.C. BETWEEN ZONES.

"L" BRACING MUST BE A MINIMUM OF 80% OF WEB MEMBER LENGTH.

GABLE VERTICAL PLATE SIZES

VERTICAL LENGTH	NO SPLICE
LESS THAN 4' 0"	1X4 OR 2X3
GREATER THAN 4' 0", BUT LESS THAN 11' 8"	2X4
GREATER THAN 11' 8"	2.5X4

+ REFER TO COMMON TRUSS DESIGN FOR PEAK, SPLICE, AND HEEL PLATES.

JULIUS LEE LICENSE NO. 34869 STATE OF FLORIDA PROFESSIONAL ENGINEER

WARNING TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO BCSI 1-03 (BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS PLATE INSTITUTE, 583 D'ONOFRIO DR., SUITE 200, MADISON, WI 53719) AND WTCA (WOOD TRUSS COUNCIL OF AMERICA, 6300 ENTERPRISE LN, 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 RIGID CEILING.

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

JULIUS LEE'S
CONS. ENGINEERS P.A.
1455 SW 4th AVENUE
DELRAY BEACH, FL 33444-2161

No: 34869
STATE OF FLORIDA

MAX. TOT. LD. 60 PSF

MAX. SPACING 24.0"

REF	ASCE7-02-GAB13015
DATE	11/26/03
DRWG	MITEK STD GABLE 15 E HT
-ENG