

# STEPCDOWN CORNER SET

TOP CHORD 2X4 SO. PINE #2 or Better  
BOT CHORD 2X4 SO. PINE #2 or Better  
WEBS 2X4 SO. PINE #3 or Better

**120 MPH MAX**

Setback 7' or Less

PROVIDE UPLIFT CONNECTIONS AT BEARINGS AS INDICATED.

UPLIFT: 400# or Less

BRG LOC: \*

UPLIFT BASED ON 7.2 PSF TOTAL DEAD LOAD. WIND  
SPEED=120 "C" MPH. MEAN HGT=28 FT. ENCLOSED. (ASCE 7-02)

PROVIDE UPLIFT CONNECTIONS AT BEARINGS AS INDICATED. TILE

UPLIFT: 400# or Less

BRG LOC: \*

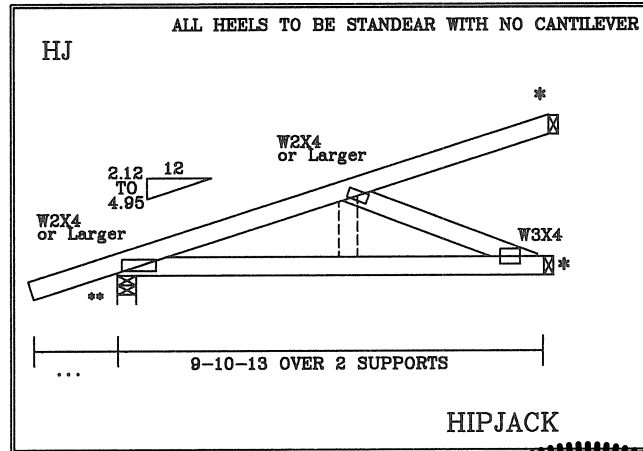
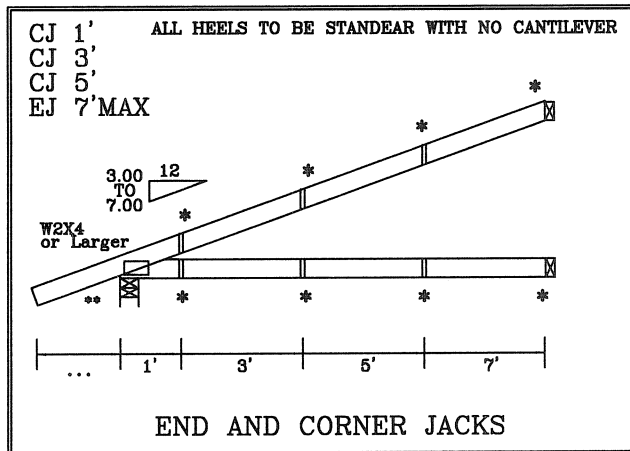
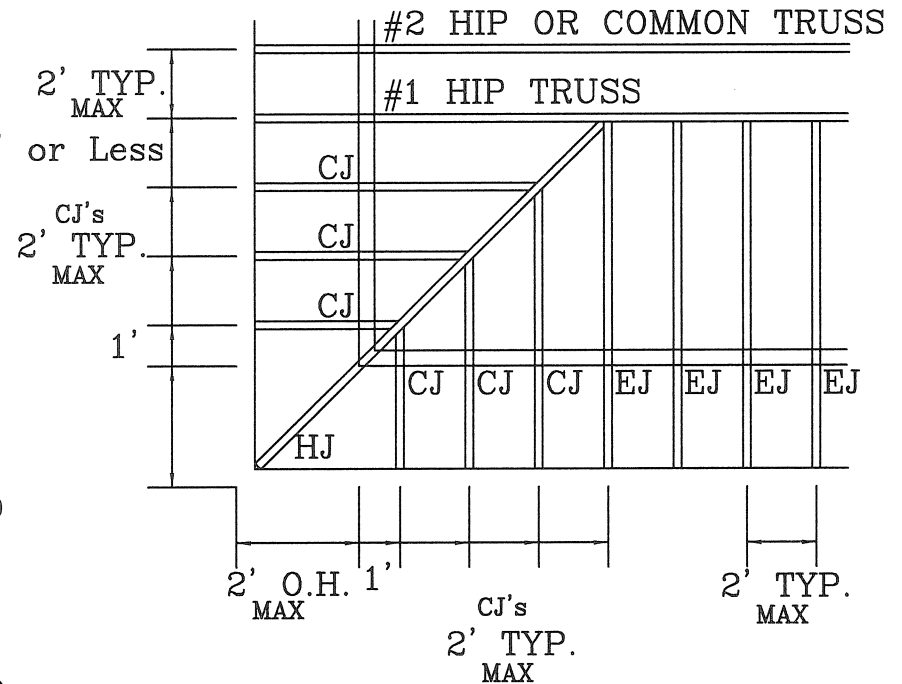
UPLIFT BASED ON 15.0 PSF TOTAL DEAD LOAD. WIND  
SPEED=120 "C" MPH. MEAN HGT (of jacks)=28 FT. ENCLOSED. (ASCE 7-02)

PROVIDE UPLIFT CONNECTIONS AT BEARINGS AS INDICATED.

UPLIFT: 400# or Less

BRG LOC: \*

UPLIFT BASED ON 7.2 PSF TOTAL DEAD LOAD. WIND  
SPEED=120 "B" MPH. MEAN HGT (of jacks)=28 FT. ENCLOSED. (ASCE 7-02)



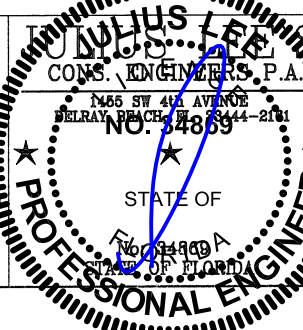
\* (3) 16d TOENAILS

\*\* SEE EOR FOR TIE DOWN

CORNER SET  
SETBACK  
7'0" MAX

\*\*\*WARNING\*\*\* TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO BCS1 1-03 (BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS PLATE INSTITUTE, 583 D'ONOFRIO DR., SUITE 200, MADISON, WI 53719) AND VTCA (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.

\*\*\*IMPORTANT\*\*\* 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 TRUSS IN CONFORMANCE WITH TPI OR FABRICATING, HANDLING, SHIPPING, INSTALLING & BRACING OF TRUSSES. DESIGN CONFORMS WITH APPLICABLE PROVISIONS OF NDS (NATIONAL DESIGN SPEC BY AF&PA) AND TPI ALPINE CONNECTOR PLATES ARE MADE OF 20/18/16GA (V.H/S/K) ASTM A653 GRADE 40/60 (V.H/S) GALV. STEEL. APPLY PLATES TO EACH FACE OF TRUSS AND, UNLESS OTHERWISE LOCATED ON THIS DESIGN, POSITION PER DRAWINGS 160A-Z. ANY INSPECTION OF PLATES FOLLOWED BY (C) SHALL BE PER ANNEX A3 OF TPI 1-2002 SEC. 3. A SEAL ON THIS DRAWING INDICATES ACCEPTANCE OF PROFESSIONAL ENGINEERING RESPONSIBILITY SOLELY FOR THE TRUSS COMPONENT DESIGN SHOWN. THE SUITABILITY AND USE OF THIS COMPONENT FOR ANY BUILDING IS THE RESPONSIBILITY OF THE BUILDING DESIGNER, PER ANSI/TPI 1 SEC. 2.



UPLIFT VALUES DO TAKE INTO ACCOUNT PORCHES EXPOSED  
BC LIVE LOAD IS NON CONCURRENT 10\*

SHINGLE	20	MAX	PSF	REF	7'MAX STBK CS
TC LL	7	MAX	PSF	DATE	Jun./27/2008
TC DL	10*	MAX	PSF	DRWG	-ENG
BC LL	5	MAX	PSF	REVIEWED	By Julius Lee at 10:52 am, Jun 27, 2008
BC DL	5	MAX	PSF		
LL	20	MAX	PSF		
DL	20	MAX	PSF		
LL	10*	MAX	PSF		
DL	5	MAX	PSF		
DUR. FAC.	1.25				
SPACING	2'	MAX			

ASCE 7-02: 110 – 130 MPH WIND SPEED, 30’ MEAN HEIGHT, ENCLOSED, I = 1.00, EXPOSURE B,C

MAX GABLE VERTICAL LENGTH	2X4 GABLE VERTICAL		BRACE	NO BRACES	(1)1X4 "L","T" BRACE*		(1)2X4 "L","T" BRACE*		(2)2X4 "L","T" BRACE**		(1)2X6 "L","T" BRACE*		(2)2X6 "L","T" BRACE**		
	SPACING	SPECIES	GRADE		GROUP A	GROUP B	GROUP A	GROUP B	GROUP A	GROUP B	GROUP A	GROUP B	GROUP A	GROUP B	
24" O.C.		SPF HF	#1 / #2	3' 2"	5' 6"	5' 8"	6' 6"	6' 9"	7' 10"	8' 0"	10' 3"	10' 7"	12' 3"	12' 7"	
			#3	3' 1"	4' 5"	4' 5"	5' 10"	5' 10"	7' 10"	7' 10"	9' 1"	9' 1"	12' 3"	12' 3"	
			STUD	3' 1"	4' 5"	4' 5"	5' 10"	5' 10"	7' 10"	7' 10"	9' 1"	9' 1"	12' 3"	12' 3"	
			STANDARD	2' 11"	3' 9"	3' 9"	5' 0"	5' 0"	6' 9"	6' 9"	7' 10"	7' 10"	10' 7"	10' 7"	
		SP DFL	#1	3' 6"	5' 6"	5' 11"	6' 6"	7' 0"	7' 10"	8' 5"	10' 3"	11' 1"	12' 3"	13' 2"	
			#2	3' 5"	5' 6"	5' 11"	6' 6"	7' 0"	7' 10"	8' 5"	10' 3"	11' 1"	12' 3"	13' 2"	
			#3	3' 3"	4' 6"	4' 6"	6' 0"	6' 0"	7' 10"	8' 1"	9' 4"	9' 4"	12' 3"	12' 8"	
			STUD	3' 3"	4' 6"	4' 6"	5' 11"	5' 11"	7' 10"	8' 0"	9' 3"	9' 3"	12' 3"	12' 6"	
		STANDARD	3' 0"	3' 10"	3' 10"	5' 1"	5' 1"	6' 11"	6' 11"	8' 0"	8' 0"	10' 10"	10' 10"		
		SPF HF	#1 / #2	3' 8"	6' 4"	6' 6"	7' 6"	7' 8"	8' 11"	9' 2"	11' 9"	12' 1"	14' 0"	14' 0"	
			#3	3' 7"	5' 5"	5' 5"	7' 2"	7' 2"	8' 11"	8' 11"	11' 2"	11' 2"	14' 0"	14' 0"	
			STUD	3' 7"	5' 5"	5' 5"	7' 2"	7' 2"	8' 11"	8' 11"	11' 1"	11' 1"	14' 0"	14' 0"	
STANDARD			3' 7"	4' 8"	4' 8"	6' 2"	6' 2"	8' 3"	8' 3"	9' 7"	9' 7"	12' 11"	12' 11"		
16" O.C.		SP DFL	#1	4' 0"	6' 4"	6' 10"	7' 6"	8' 1"	8' 11"	9' 7"	11' 9"	12' 8"	14' 0"	14' 0"	
			#2	3' 11"	6' 4"	6' 10"	7' 6"	8' 1"	8' 11"	9' 7"	11' 9"	12' 8"	14' 0"	14' 0"	
			#3	3' 9"	5' 7"	5' 7"	7' 4"	7' 4"	8' 11"	9' 5"	11' 5"	11' 5"	14' 0"	14' 0"	
			STUD	3' 9"	5' 6"	5' 6"	7' 3"	7' 3"	8' 11"	9' 5"	11' 4"	11' 4"	14' 0"	14' 0"	
			STANDARD	3' 8"	4' 9"	4' 9"	6' 3"	6' 3"	8' 5"	8' 5"	9' 9"	9' 9"	13' 3"	13' 3"	
			SPF HF	#1 / #2	4' 0"	6' 11"	7' 2"	8' 3"	8' 6"	9' 10"	10' 1"	12' 11"	13' 4"	14' 0"	14' 0"
	#3			3' 11"	6' 3"	6' 3"	8' 3"	8' 3"	9' 10"	9' 10"	12' 11"	12' 11"	14' 0"	14' 0"	
	STUD			3' 11"	6' 3"	6' 3"	8' 3"	8' 3"	9' 10"	9' 10"	12' 10"	12' 10"	14' 0"	14' 0"	
	STANDARD			3' 11"	5' 4"	5' 4"	7' 1"	7' 1"	9' 6"	9' 6"	11' 1"	11' 1"	14' 0"	14' 0"	
			SP DFL	#1	4' 5"	6' 11"	7' 6"	8' 3"	8' 11"	9' 10"	10' 7"	12' 11"	13' 11"	14' 0"	14' 0"
				#2	4' 4"	6' 11"	7' 6"	8' 3"	8' 11"	9' 10"	10' 7"	12' 11"	13' 11"	14' 0"	14' 0"
	12" O.C.		SPF HF	#3	4' 2"	6' 5"	6' 5"	8' 3"	8' 6"	9' 10"	10' 4"	12' 11"	13' 3"	14' 0"	14' 0"
STUD				4' 2"	6' 4"	6' 4"	8' 3"	8' 5"	9' 10"	10' 4"	12' 11"	13' 1"	14' 0"	14' 0"	
				STANDARD	4' 0"	5' 6"	5' 6"	7' 3"	7' 3"	9' 9"	9' 9"	11' 4"	11' 4"	14' 0"	14' 0"
				SP DFL	#1 / #2	4' 0"	6' 11"	7' 2"	8' 3"	8' 6"	9' 10"	10' 1"	12' 11"	13' 4"	14' 0"
			#3		3' 11"	6' 3"	6' 3"	8' 3"	8' 3"	9' 10"	9' 10"	12' 11"	12' 11"	14' 0"	14' 0"
			STUD	3' 11"	6' 3"	6' 3"	8' 3"	8' 3"	9' 10"	9' 10"	12' 10"	12' 10"	14' 0"	14' 0"	

BRACING GROUP SPECIES AND GRADES:

GROUP A:			
SPRUCE-PINE-FIR		HEM-FIR	
#1 / #2	STANDARD	#2	STUD
#3	STUD	#3	STANDARD
DOUGLAS FIR-LARCH		SOUTHERN PINE	
#3		#3	
STUD		STUD	
STANDARD		STANDARD	

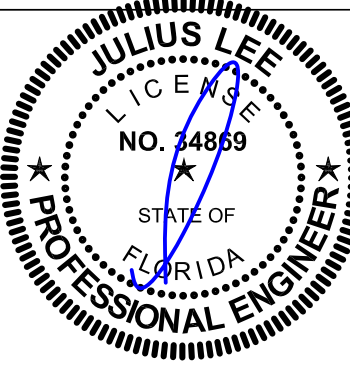
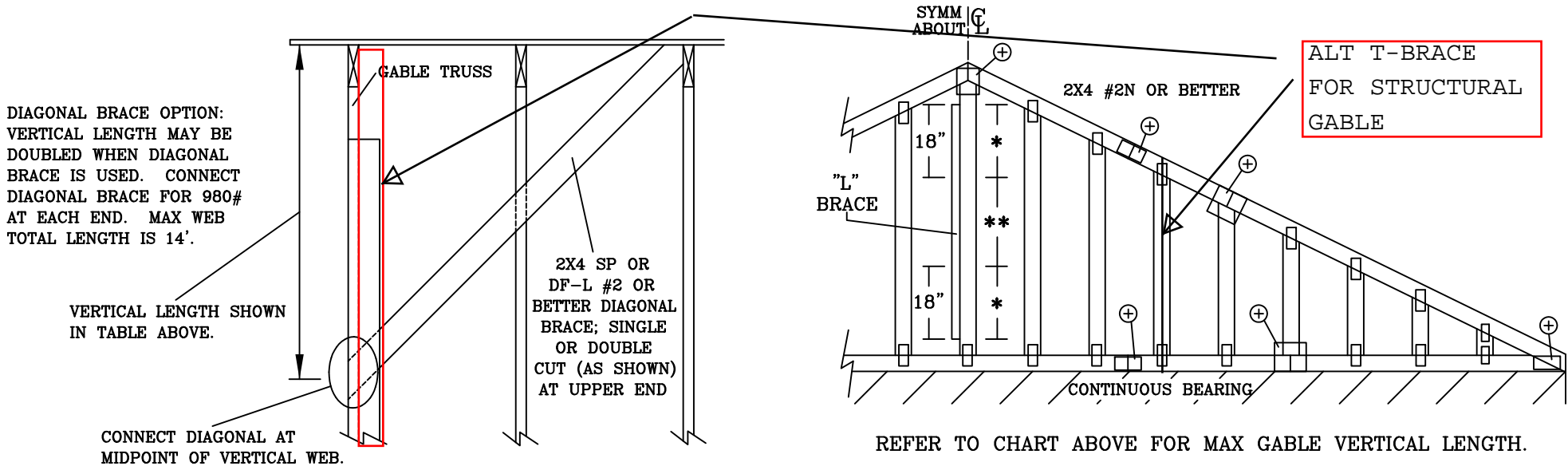
GROUP B:			
HEM-FIR			
#1 & BTR			
#1			
SOUTHERN PINE		DOUGLAS FIR-LARCH	
#1		#1	
#2		#2	

GABLE TRUSS DETAIL NOTES:

- LIVE LOAD DEFLECTION CRITERIA IS L/240.
- PROVIDE UPLIFT CONNECTIONS FOR 160 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"or"T" BRACE WITH 10d NAILS.
- \* FOR (1) "L"or"T" BRACE: SPACE NAILS AT 2"O.C. IN 18" END ZONES AND 4" O.C. BETWEEN ZONES.
- \*\* FOR (2) "L"or"T" BRACES: SPACE NAILS AT 3"O.C. IN 18" END ZONES AND 6" O.C. BETWEEN ZONES.
- "L"or"T" 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"	2X4

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



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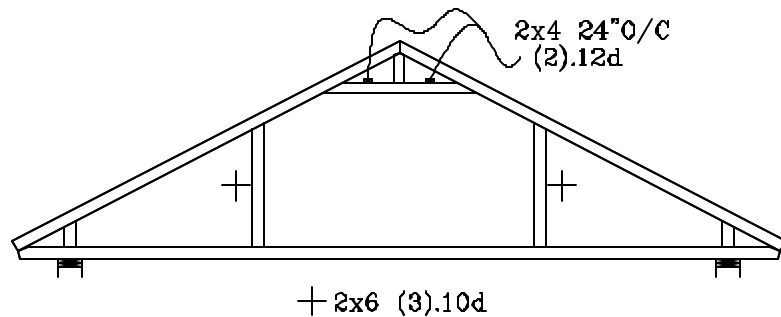
**JULIUS LEE'S**  
CONS. ENGINEERS P.A.  
1109 COASTAL BAY BLVD.  
BOYNTON BEACH, FL 33435

No: 34869  
STATE OF FLORIDA

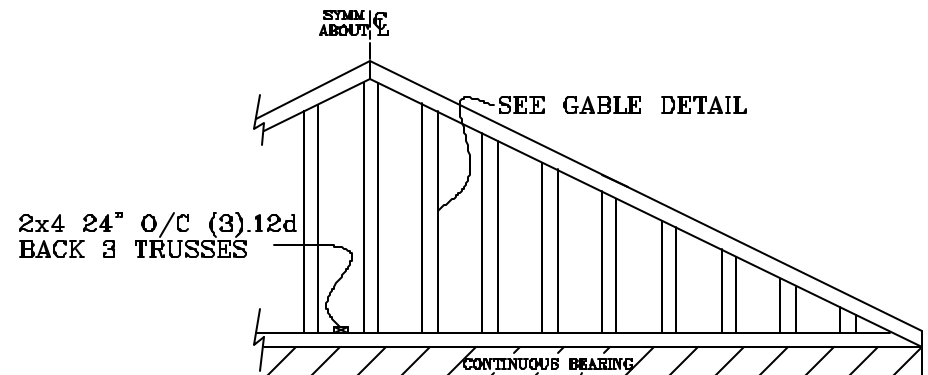
MAX LOADING  
55 PSF AT  
1.25 DUR. FAC.  
50 PSF AT  
1.25 DUR. FAC.  
42 PSF AT  
1.25 DUR. FAC.  
MAX. SPACING 24.0"

REF ASCE7-98-GAB13030  
DATE DEC./04/2008  
DRWG  
-ENG

## TYPICAL ATTIC TRUSS BRACING

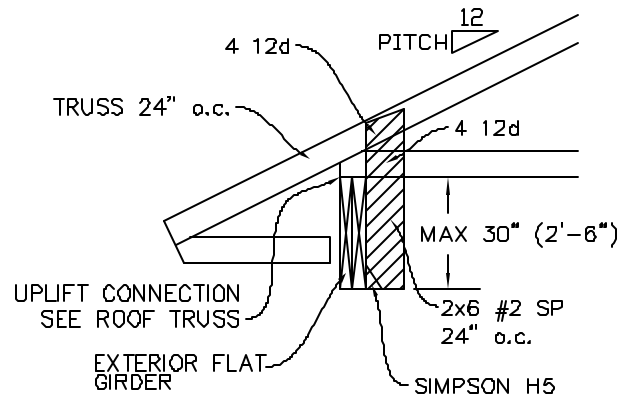


## GABLE END TRUSS DETAIL

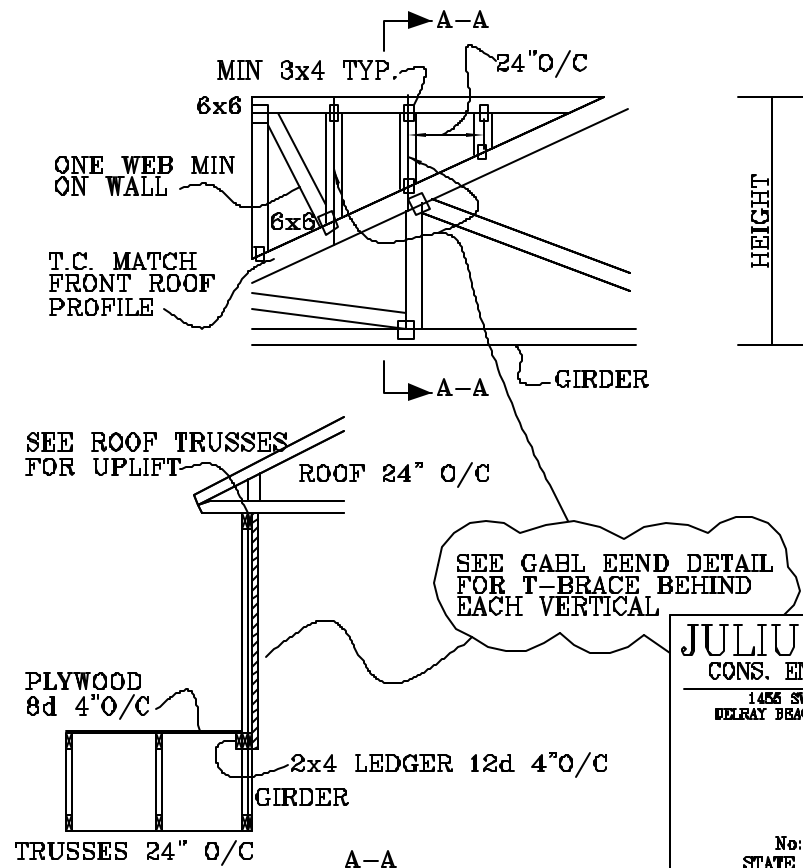


MINIMUM BC BRACING ON GABLE TRUSS. OTHER PERMANENT BRACING DESIGNS BY ARCHITECT OR EOR

## TYPICAL ALTERNATE BRACING DETAIL FOR EXTERIOR FLAT GIRDER TRUSS

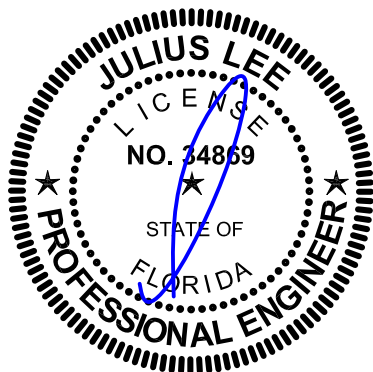


## TYPICAL WALL GIRDER VERTICAL WEB BRACING DETAIL



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 33444-2101

No: 34869  
STATE OF FLORIDA

TOP CHORD 2X4 #2 OR BETTER  
 BOT CHORD 2X4 #2 OR BETTER  
 WEBS 2X4 #3 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.

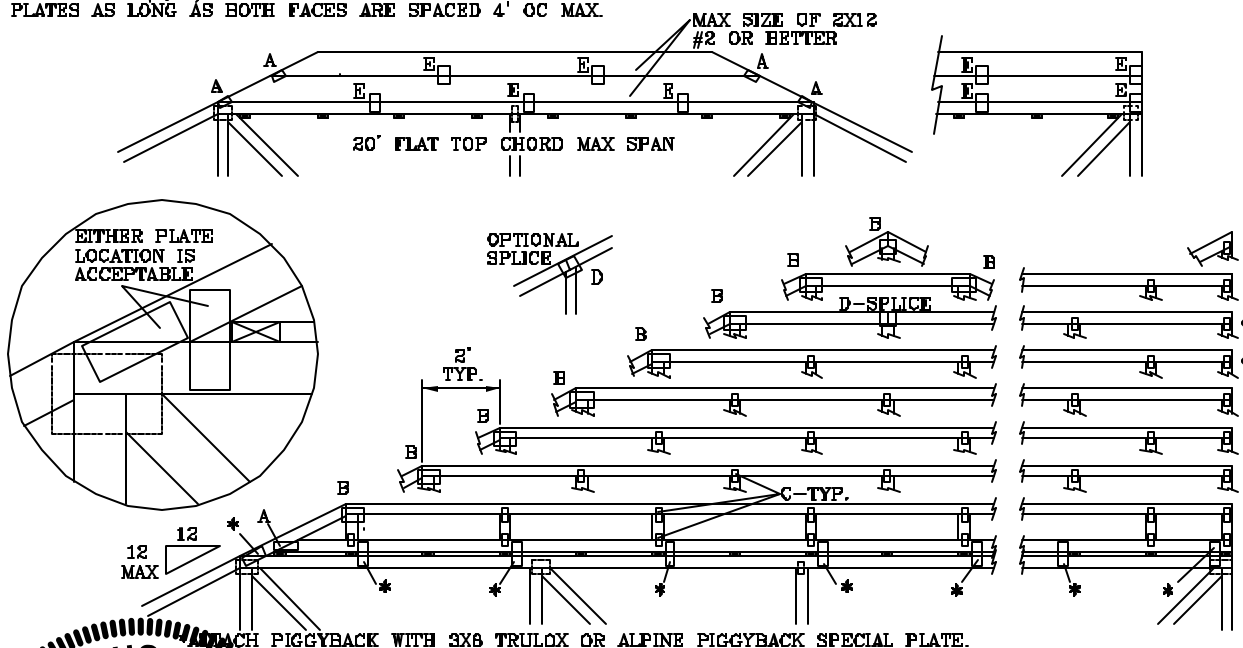
THIS DETAIL IS APPLICABLE FOR THE FOLLOWING WIND CONDITIONS:

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 II, EXP. C,  
 WIND TC DL=5 PSF, WIND BC DL=5 PSF

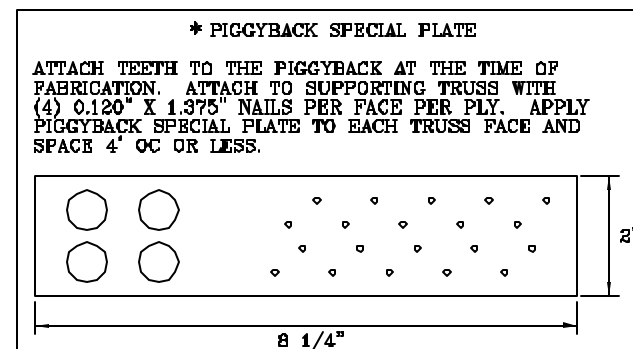
FRONT FACE (E,\*) PLATES MAY BE OFFSET FROM BACK FACE PLATES AS LONG AS BOTH FACES ARE SPACED 4' OC MAX.



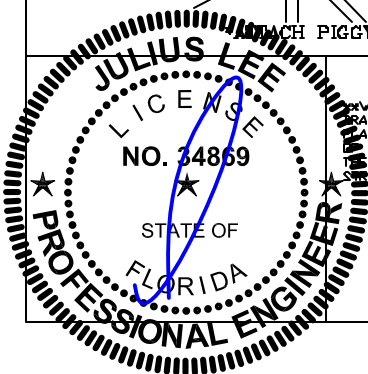
JOINT TYPE	SPANS UP TO			
	30'	34'	38'	52'
A	2X4	2.5X4	2.5X4	3X5
B	4X8	5X8	5X8	5X8
C	1.5X3	1.5X4	1.5X4	1.5X4
D	5X4	5X5	5X5	5X6
E	4X8 OR 3X6 TRULOX AT 4' OC, ROTATED VERTICALLY			

ATTACH TRULOX 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 TRULOX INFORMATION.

WEB BRACING CHART	
WEB LENGTH	REQUIRED BRACING
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 8d 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.



THIS DRAWING REPLACES DRAWINGS 634,016 634,017 & 847,045



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**REVIEWED**

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

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

No: 34869  
 STATE OF FLORIDA

MAX LOADING	REF PIGGYBACK
55 PSF AT	DATE 09/12/07
1.33 DUR. FAC.	DRWGMITEK STD PIGGY
50 PSF AT	-ENG JL
1.25 DUR. FAC.	
47 PSF AT	
1.15 DUR. FAC.	
SPACING 24.0"	

# 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

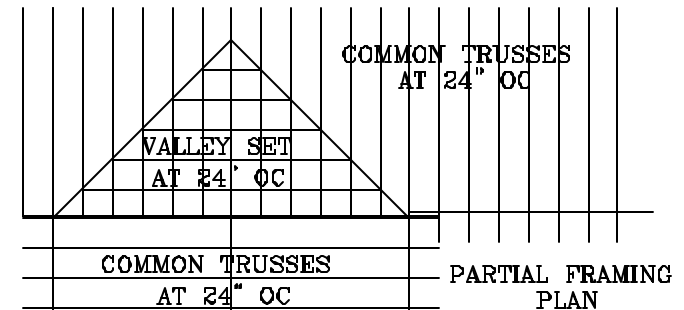
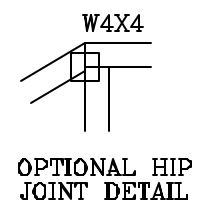
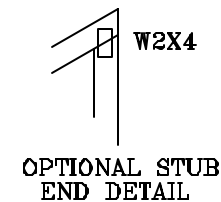
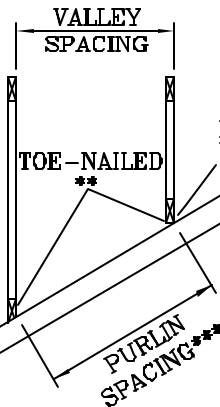
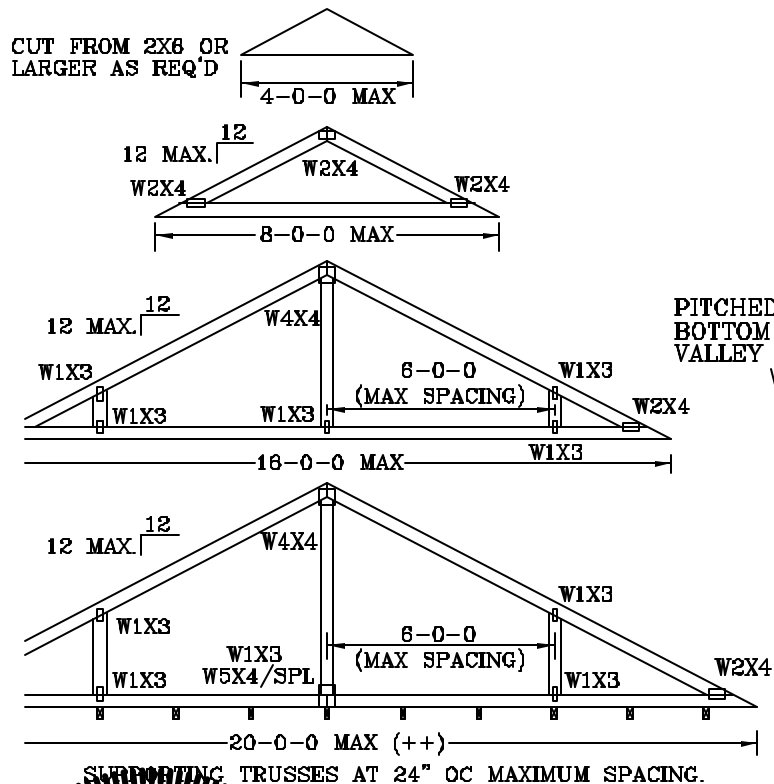
OR

BY VALLEY TRUSSES USED IN LIEU OF PURLIN SPACING AS SPECIFIED ON  
ENGINEERS' SEALED DESIGN.

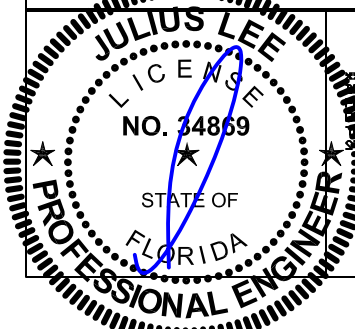
\*\*\* NOTE THAT THE PURLIN SPACING FOR BRACING THE TOP CHORD OF THE TRUSS  
BENEATH THE VALLEY IS MEASURED ALONG THE SLOPE OF THE TOP CHORD.

++ 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.



THIS DRAWING REPLACES DRAWING A105



WARNING: TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND  
BRACING. REFER TO BCST 1-03 (BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS  
INSTITUTE, 583 DODGERS DR., SUITE 200, MADISON, WI 53719) AND WTC (WOOD TRUSS COUNCIL  
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"				

# 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."

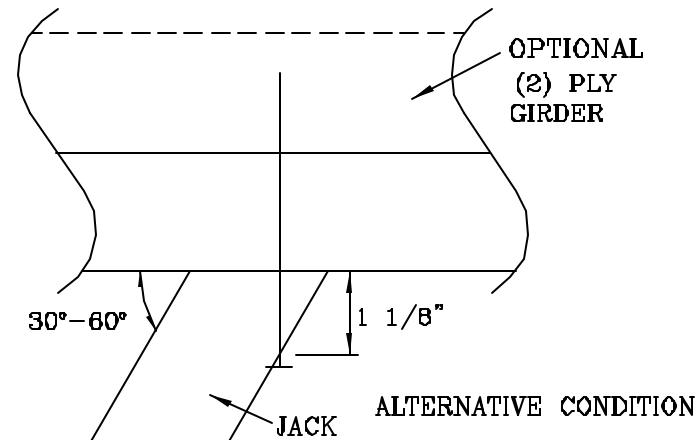
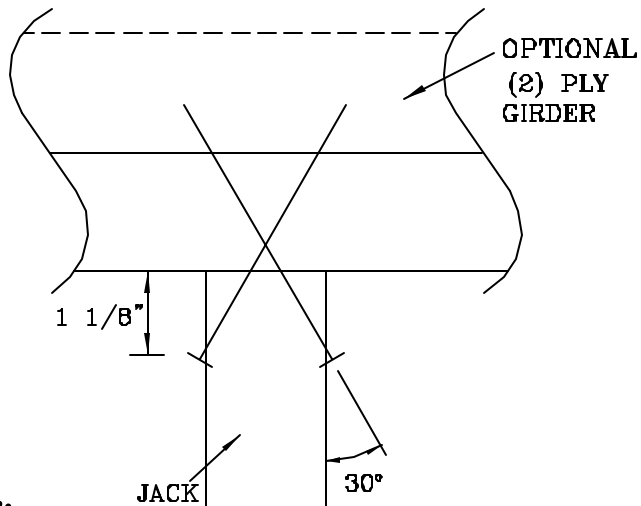
THE NUMBER OF TOE-NAILS TO BE USED IN A SPECIFIC APPLICATION IS DEPENDENT UPON PROPERTIES FOR THE CHORD SIZE, LUMBER SPECIES, AND NAIL TYPE. PROPER CONSTRUCTION PRACTICES AS WELL AS GOOD JUDGEMENT SHOULD DETERMINE THE NUMBER OF NAILS TO BE USED.

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

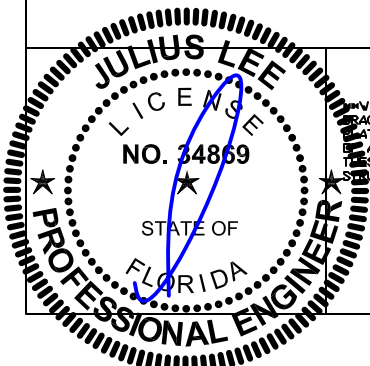
MAXIMUM VERTICAL RESISTANCE OF 16d (0.162"x3.5") COMMON TOE-NAILS

NUMBER OF TOE-NAILS	SOUTHERN PINE		DOUGLAS FIR-LARCH		HEM-FIR		SPRUCE PINE FIR	
	1 PLY	2 PLIES	1 PLY	2 PLIES	1 PLY	2 PLIES	1 PLY	2 PLIES
2	197#	256#	181#	234#	156#	203#	154#	199#
3	296#	383#	271#	351#	234#	304#	230#	298#
4	394#	511#	361#	468#	312#	406#	307#	397#
5	493#	639#	452#	585#	390#	507#	384#	496#

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 BCSI 1-03 BUILDING COMPONENT SAFETY INFORMATION, PUBLISHED BY TPI TRUSS INSTITUTE, 583 D'UNFRIED DR., SUITE 200, MADISON, WI 53719) AND VTCA (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	TOE-NAIL
TC DL	PSF	DATE	09/12/07
BC DL	PSF	DRWG	CNTONAIL1103
BC LL	PSF	-ENG	JL
TOT. LD.	PSF		
DUR. FAC.	1.00		
SPACING			



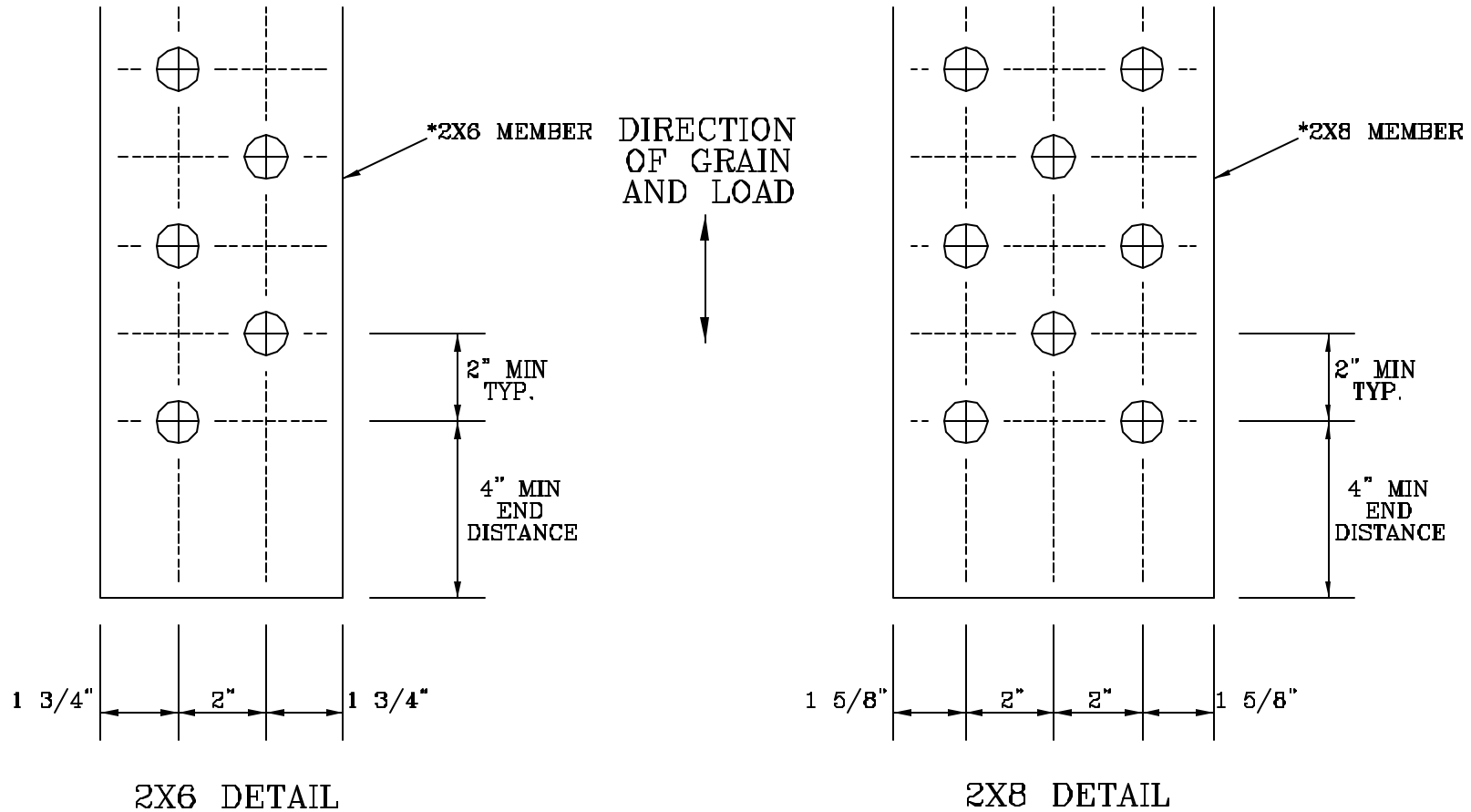
# 1/2" DIAMETER BOLT SPACING FOR LOAD APPLIED PARALLEL TO GRAIN.

\* GRADE AND SPECIES AS SPECIFIED ON THE ALPINE DESIGN.

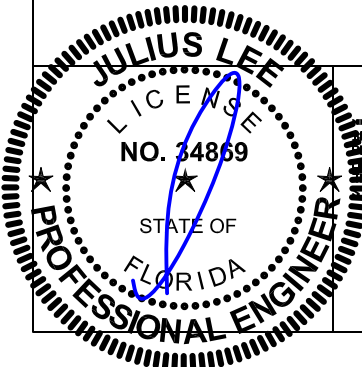
BOLT HOLES SHALL BE A MINIMUM OF 1/32" TO A MAXIMUM OF 1/16" LARGER THAN BOLT DIAMETER.

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



THIS DRAWING REPLACES DRAWING A628.016



WARNING: TRUSSES REQUIRE EXTREME CARE IN FABRICATING, HANDLING, SHIPPING, INSTALLING AND BRACING. REFER TO BCSI L-03 (BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS PLATE INSTITUTE, 583 DODD FRID 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 BV 4th 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	CNBOLTSP1103
BC LL	PSF	-ENG	JL
TOT. LD.	PSF		
DUR. FAC.			
SPACING			

# TRULOX CONNECTION DETAIL

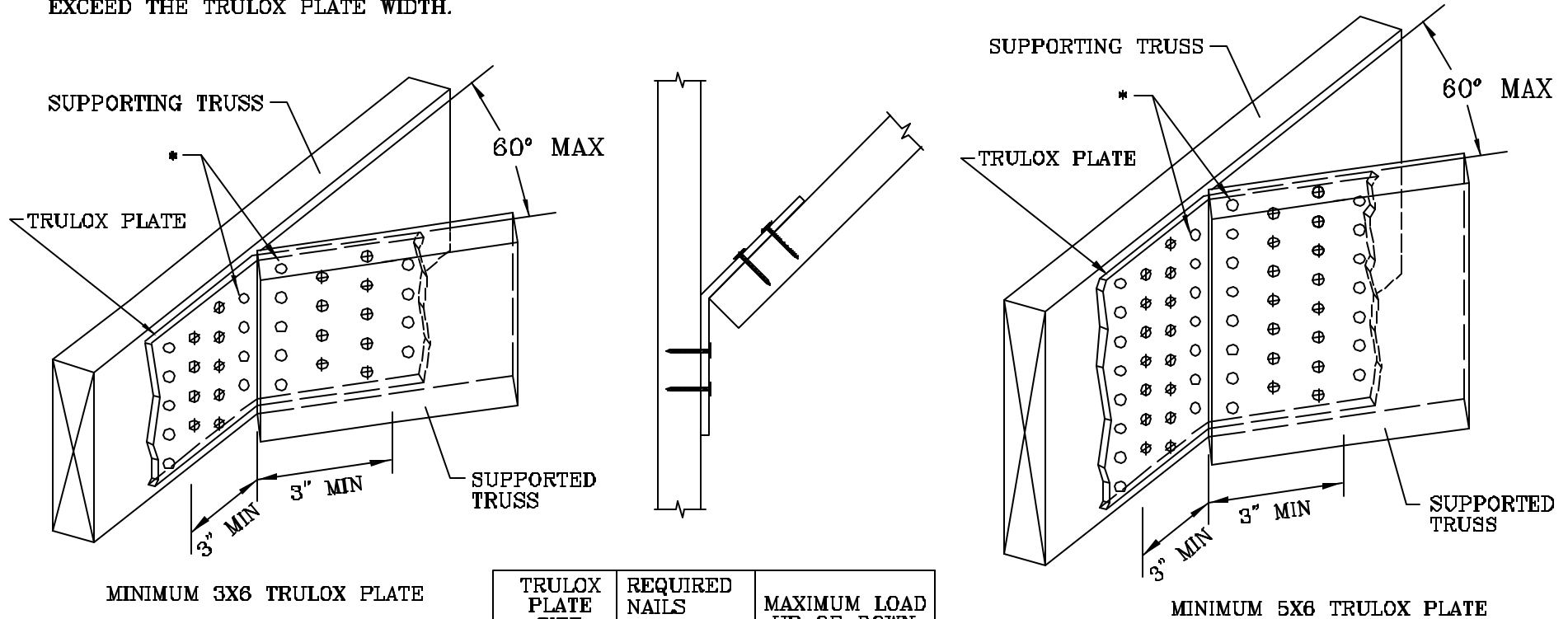
11 GAUGE (0.120" X 1.375") NAILS REQUIRED FOR TRULOX PLATE ATTACHMENT. FILL ROWS COMPLETELY WHERE SHOWN (⊕).

\* NAILS MAY BE OMITTED FROM THESE ROWS.

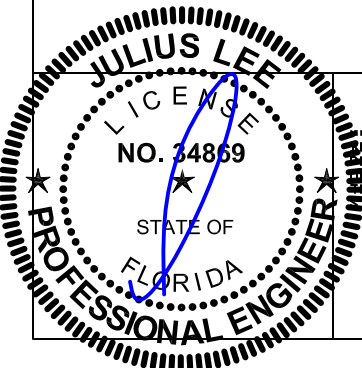
THIS DETAIL MAY BE USED WITH SO. PINE, DOUGLAS-FIR OR HEM-FIR CHORDS WITH A MINIMUM 1.00 DURATION OF LOAD OR SPRUCE-PINE-FIR CHORDS WITH A MINIMUM 1.15 DURATION OF LOAD. CHORD SIZE OF BOTH TRUSSES MUST EXCEED THE TRULOX PLATE WIDTH.

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.



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 BRACING. REFER TO BC31 1-03 (BUILDING COMPONENT SAFETY INFORMATION), PUBLISHED BY TPI (TRUSS PLATE INSTITUTE, 583 DENDRIFORD DR., SUITE 200, MADISON, VI 53719) AND WTCA (WOOD TRUSS COUNCIL OF AMERICA, 6300 ENTERPRISE LN, MADISON, VI 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 11:58 am, Jun 11, 2008

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

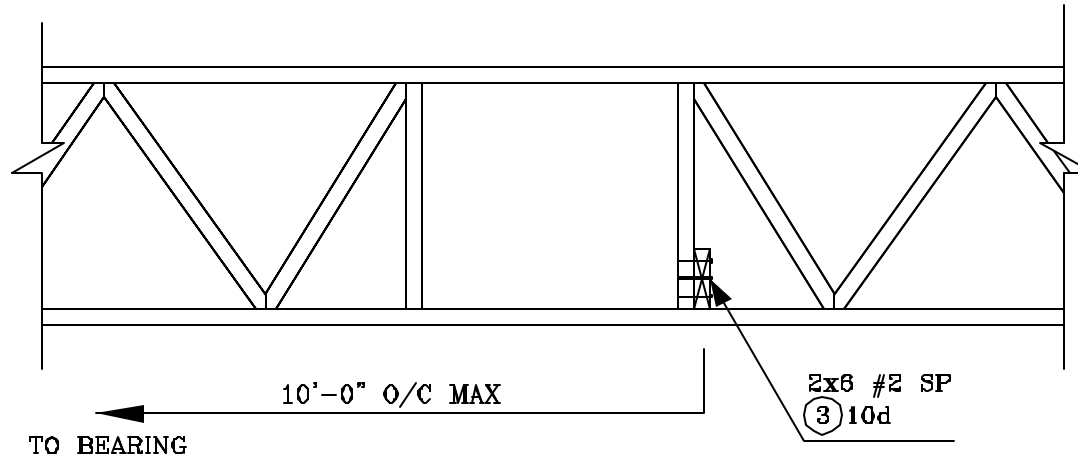
1455 SW 4th AVENUE  
DELRAY BEACH, FL 33444-2151

No: 34869  
STATE OF FLORIDA

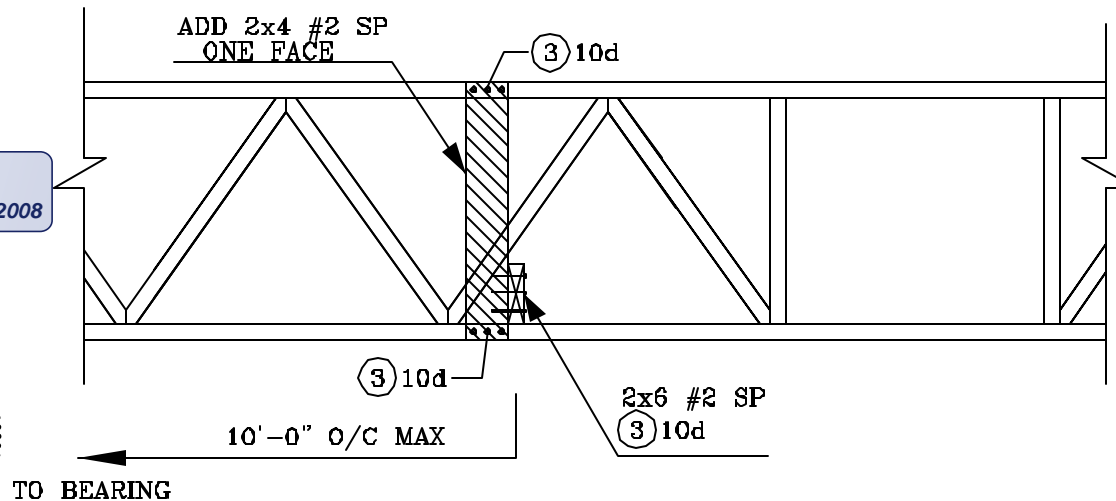
REF	TRULOX
DATE	11/26/03
DRWG	CNTRULOX1103
-ENG	JL



STRONG BACK DETAIL  
SYSTEM-42 OR FLAT TRUSS

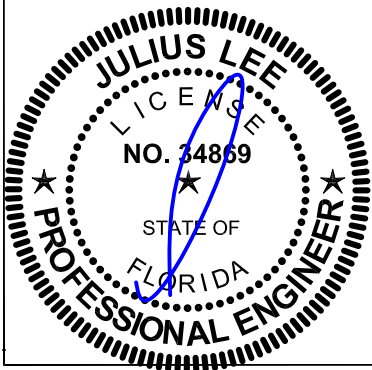


ALTERNATE DETAIL FOR  
STRONG BACK WITH VERTICAL  
NOT LINING UP



**REVIEWED**

By julius lee at 11:58 am, Jun 11, 2008

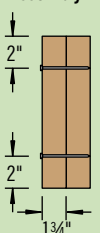
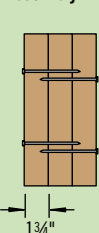
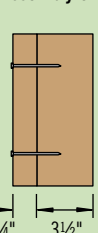

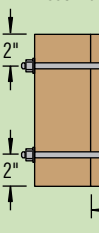
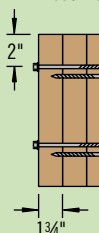


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1456 SW 4th AVENUE  
DELRAY BEACH, FL 33444-2101

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.

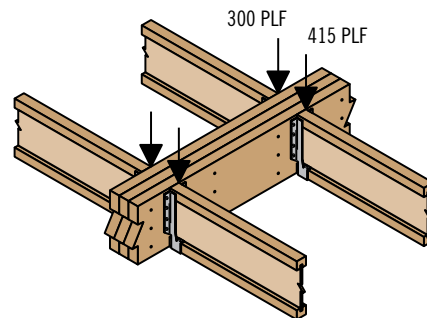
(3) 6" SDS or WS screws can be used with Parallam® PSL and Microllam® LVL, but are not recommended for TimberStrand® LSL.

(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>(3)</sup>	1,775 <sup>(3)</sup>
	6	3,815	2,860 <sup>(4)</sup>	2,860	2,545	2,890 <sup>(3)</sup>	2,665 <sup>(3)</sup>
	8	5,090	3,815 <sup>(4)</sup>	3,815	3,390	3,855 <sup>(3)</sup>	3,550 <sup>(3)</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

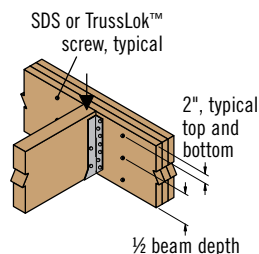
(2) 6" long screws required.

(3) 5" long screws required.

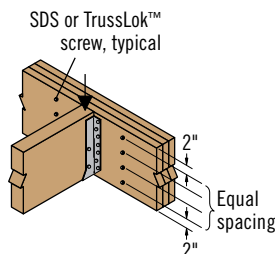
(4) 3 1/2" and 3 3/8" long screws must be installed on both sides.

## Connections

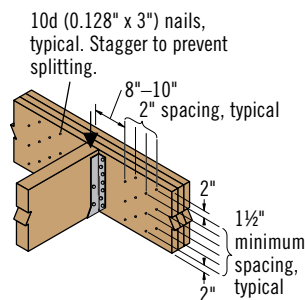
### 4 or 6 or Screw Connection



### 8 Screw Connection

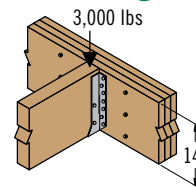


### Nail Connection



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

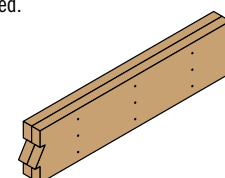
on both sides. Stagger fasteners on opposite side of beam by 1/2 of the required connector spacing.

- 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"