

HARDWARE:

LUS24 - (O)
 LJS26DS - (V)
 LUS26-2 - (VV)
 HGUS26-2 - (XX)
 HUC26-2 (CC)

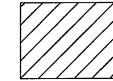
ASPHALT SHINGLES
 FINISHED OVERHANG: 12"
 2x6 EXTERIOR WALLS
 2x6 FASCIA BOARD
 HEEL: R.T.M.C.

All conventional framing to conform with
 Part 9 of O.B.C. 2012 (2019 amendment).
 Roof rafters that cross over or meet trusses
 to be min. 2x4 SPF #2 @ 24" o/c with a
 vertical post to the truss at each cross
 point. Vertical posts longer than 6' to have
 lateral bracing so that the distance between
 the post end points and lateral bracing does
 not exceed 6'.

DESIGN CONFORMS WITH OBC 2012
 (2019 amendment) OCCUPANCY:
 RESIDENTIAL | PART: 9
 Ss = 31.35 psf | Sr = 8.4 psf

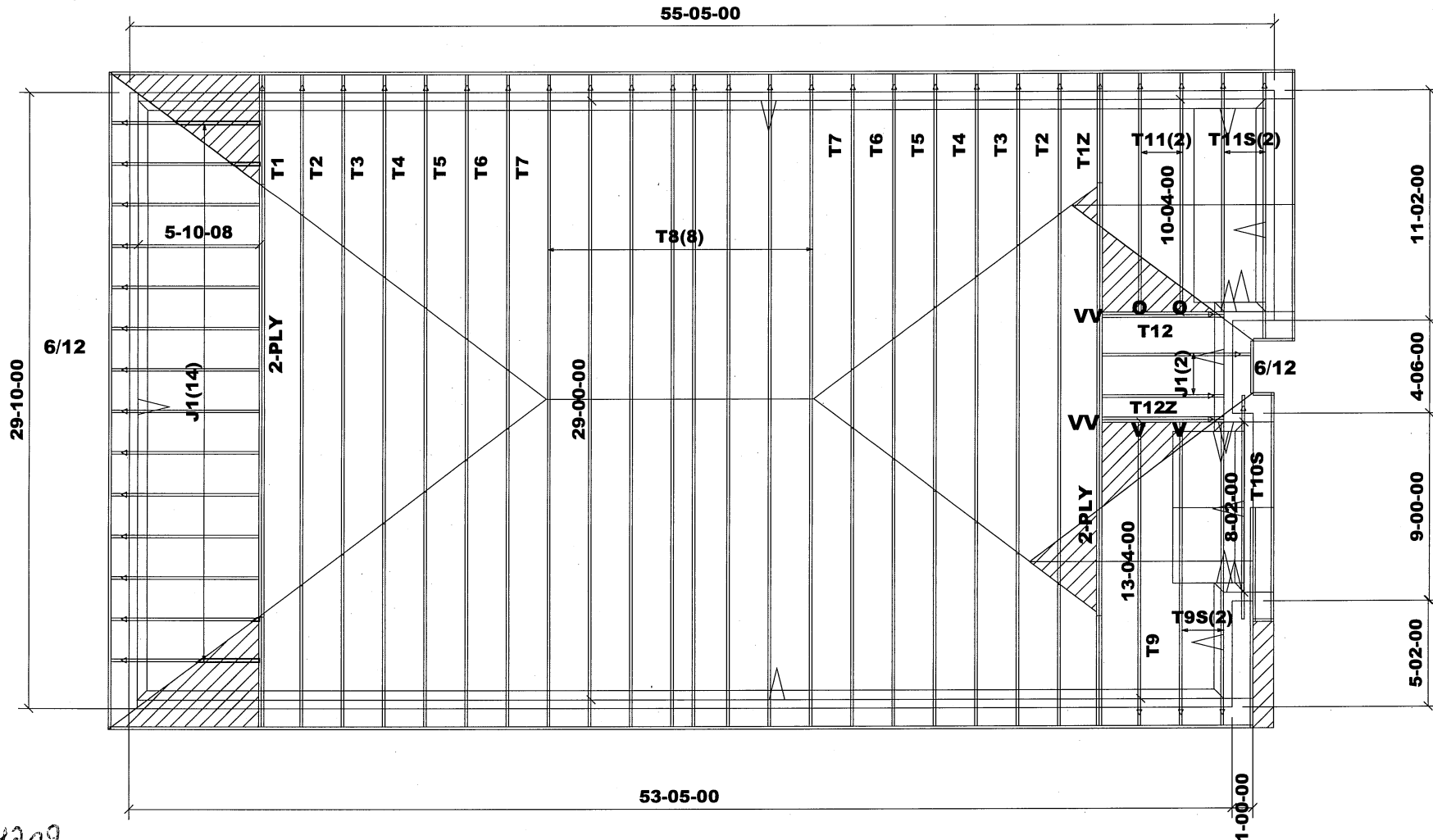
DESIGN LOADS:

TCSL = 25.6 psf
 TCDL = 6.0 psf
 BCLL = 0.0 psf
 BCDL = 7.4 psf



DENOTES:
 CONVENTIONAL
 FRAMING

8/12 roof pitch unless noted



M14209



Job Track: **51012**
 Plan Log: **204917**
 Layout ID: **419845**

Builder / Location:

ROYAL PINE HOMES / RICHMOND HILL

Model / Elevation:

38-14 / A-STD OR OPT, COVENTRY

Project: **CENTREFIELD**

Date: **2021-08-05** Sales: Rick DiCiano Designer: JG

THESE DRAWINGS CONSTITUTE THE PROPERTY OF TAMARACK ROOF TRUSSES INC., SHALL NOT BE REPRODUCED, PUBLISHED, OR REDISTRIBUTED IN ANY MANNER OR UTILIZED FOR ANY PURPOSE OTHER THAN THE MANUFACTURE OF TRUSSES BY TAMARACK ROOF TRUSSES INC AND WILL BE RETRACTED BY TAMARACK ROOF TRUSSES INC IF UTILIZED FOR ANY OTHER PURPOSE.

Mitek ver 8.4.2.286

LUS24 - (O)
LJS26DS - (V)
LUS26-2- (VV)
HGUS26-2 - (XX)
HUC26-2 (CC)

All conventional framing to conform with Part 9 of O.B.C. 2012 (2019 amendment). Roof rafters that cross over or meet trusses to be min. 2x4 SPF #2 @ 24" o/c with a vertical post to the truss at each cross point. Vertical posts longer than 6' to have lateral bracing so that the distance between the post end points and lateral bracing does not exceed 6'.

TCSL = 25.6 psf
TCDL = 6.0 psf
BCLL = 0.0 psf
BCDL = 7.4 psf

1-6-0 plate height diff.

Architectural floor plan of a rectangular building. The plan shows a grid of columns and beams. The overall dimensions are 55-05-00 (width) and 29-10-00 (depth). The plan includes a central area with a diagonal line and a shaded triangular region. Labels include '55-05-00', '29-10-00', '6/12', 'J1(14)', '2-PLY', 'T1', 'T2', 'T3', 'T4', 'T5', 'T6', 'T7', 'T8(8)', 'T20', 'T21', 'T22', 'T23', 'J20(3)', 'J21(3)', 'C20', 'C21', 'XX', '6-10-8', '5-10-8', '11-10-00', '6-10-00', '11-02-00', '53-05-00', '1-00-00', '1-00-00', 'raised ceiling', and '5-10-08'.

M14209



Job Track:	51012
Plan Log:	204917
Layout ID:	419846

ROYAL PINE HOMES / RICHMOND HILL

38-14 / B-STD OR OPT. COVENTRY

Project: **CENTREFIELD**

Date: 2021-08-05	Sales: Rick DiCiano	Designer: JG
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LUS24 - (O)
LJS26DS - (V)
LUS26-2- (VV)
HGUS26-2 - (XX)
HUC26-2 (CC)

All conventional framing to conform with Part 9 of O.B.C. 2012 (2019 amendment). Roof rafters that cross over or meet trusses to be min. 2x4 SPF #2 @ 24" o/c with a vertical post to the truss at each cross point. Vertical posts longer than 6' to have lateral bracing so that the distance between the post end points and lateral bracing does not exceed 6'.

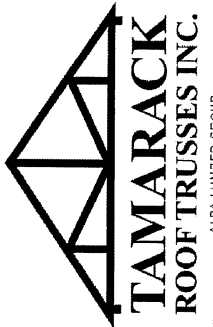
DESIGN LOADS:
TCSL = 25.6 psf
TCDL = 6.0 psf
BCLL = 0.0 psf
BCDL = 7.4 psf

8/12 roof pitch unless noted



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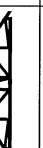


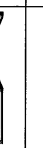

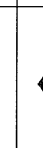



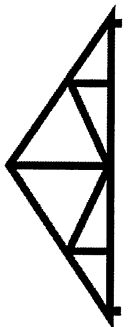
TAMARACK
ROOF TRUSSES INC.
ALPHA LUMBER GROUP

DELIVERY SHIPLIST

Lumber Yard:	TAMARACK LUMBER	Job Track:	51012
Builder:	ROYAL PINE HOMES	PlanLog:	204917
Project:	CENTREFIELD	Layout ID:	419845
Location:	RICHMOND HILL	Ref #	1 of 2
Model:	38-14	Page:	08-05-2021
Lot #:		Designer:	
Elevation:	A-STD OR OPT.	Sales Rep:	Rick DiCiano

Roof Trusses

PROFILE	QTY PLY	MARK TYPE	PITCH	SPAN	HEIGHT	LUMBER	OVERHANG LEFT RIGHT	HEEL HEIGHT LEFT RIGHT	LBS. BFT.	BUNDLE # STACK #	LOAD BY REMARKS
	1 2-ply	T1 Hip Girder	8 /12	29-00-00	4-01-04	2 x 4 2 x 6	1-03-08 1-03-08	1-04-13 1-04-13	297.17 180.00		
	1 2-ply	T12 Hip Girder	8 /12	29-00-00	4-01-04	2 x 4 2 x 6	1-03-08 1-03-08	1-04-13 1-04-13	297.17 180.00		
	2	T2 Hip	8 /12	29-00-00	5-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	232.06 146.67		
	2	T3 Hip	8 /12	29-00-00	6-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	252.46 160.00		
	2	T4 Hip	8 /12	29-00-00	7-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	255.97 162.33		
	2	T5 Hip	8 /12	29-00-00	8-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	269.05 168.00		
	2	T6 Hip	8 /12	29-00-00	9-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	263.53 164.00		
	2	T7 Hip	8 /12	29-00-00	10-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	268.04 168.67		
	8	T8 Common	8 /12	29-00-00	11-00-13	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	1111.22 693.33		
	1	T9 Common	8 /12	13-04-00	5-10-02	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	58 37.00		
	2	T9S Roof Special	8 /12 5 /12	13-04-00	5-10-02	2 x 4	1-03-08	1-04-13 1-04-13	124.38 82.67		
	1	T10S Scissor	8 /12 5 /12	8-02-00	4-01-08	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	35.67 23.67		
	2	T11 Common	8 /12	10-04-00	4-10-02	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	86.9 53.67		
	2	T11S Scissor	8 /12 5 /12	10-04-00	4-10-02	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	86.86 55.67		



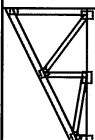
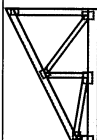
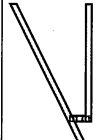
TAMARACK
ROOF TRUSSES INC.
ALPHA LUMBER GROUP

DELIVERY SHIPLIST

Lumber Yard: TAMARACK LUMBER
Builder: ROYAL PINE HOMES
Project: CENTREFIELD
Location: RICHMOND HILL
Model: 38-14
Lot #:
Elevation: A-STD OR OPT.

Job Track: 51012
PlanLog: 204917
Layout ID: 419845
Ref #: 2 of 2
Page: 08-05-2021
Date:
Designer:
Sales Rep: Rick DiCiano

Roof Trusses


PROFILE	QTY PLY	MARK TYPE	PITCH	SPAN	HEIGHT	LUMBER	OVERHANG LEFT RIGHT	HEEL HEIGHT LEFT RIGHT	LBS. BFT.	BUNDLE # STACK #	LOAD BY REMARKS
	1 2-ply	T12 Jack-Closed Girder	6 /12	5-10-08	4-01-04	2 x 4 2 x 6		1-02-00 4-01-04	57.64 37.00		
	1 2-ply	T12Z Jack-Closed Girder	6 /12	5-10-08	4-01-04	2 x 4 2 x 6		1-02-00 4-01-04	57.64 37.00		
	16	J1 Jack-Open	6 /12	5-10-08	4-01-04	2 x 4	1-03-08	1-02-00 4-01-04	268.68 170.67		

TOTAL # TRUSS= 52 TOTAL BFT OF ALL TRUSSES= 2520.35 BFT. TOTAL WEIGHT OF ALL TRSSES 4022.44 LBS















HARDWARE

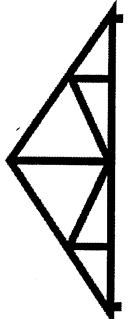
QTY	TYPE	MODEL	LENGTH
2	Hardware	LJS26DS	
2	Hardware	LUS24	
2	Hardware	LUS26-2	

TOTAL NUMBER OF ITEMS= 6

DELIVERY SHIPLIST			
 <p style="margin: 0;">TAMARACK ROOF TRUSSES INC. <small>ALPHA LUMBER GROUP</small></p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Lumber Yard: TAMARACK LUMBER Builder: ROYAL PINE HOMES Project: CENTREFIELD Location: RICHMOND HILL Model: 38-14 Lot #: Elevation: B-STD OR OPT. </td> <td style="width: 50%; vertical-align: top;"> Job Track: 51012 PlanLog: 204917 Layout ID: 419846 Ref #: 1 of 2 Page: 08-05-2021 Date: Designer: Sales Rep: Rick DiCiano </td> </tr> </table>	Lumber Yard: TAMARACK LUMBER Builder: ROYAL PINE HOMES Project: CENTREFIELD Location: RICHMOND HILL Model: 38-14 Lot #: Elevation: B-STD OR OPT.	Job Track: 51012 PlanLog: 204917 Layout ID: 419846 Ref #: 1 of 2 Page: 08-05-2021 Date: Designer: Sales Rep: Rick DiCiano
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Roof Trusses

PROFILE	QTY PLY	MARK TYPE	PITCH	SPAN	HEIGHT	LUMBER	OVERHANG LEFT RIGHT	HEEL HEIGHT LEFT RIGHT	LBS. BFT.	BUNDLE # STACK #	LOAD BY REMARKS
	1 2-ply	T1 Hip Girder	8 /12	29-00-00	4-01-04	2 x 4 2 x 6	1-03-08 1-03-08	1-04-13 1-04-13	270.74 165.33		
	2	T2 Hip	8 /12	29-00-00	5-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	232.06 146.67		
	2	T3 Hip	8 /12	29-00-00	6-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	252.46 160.00		
	2	T4 Hip	8 /12	29-00-00	7-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	255.97 162.33		
	2	T5 Hip	8 /12	29-00-00	8-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	269.05 168.00		
	2	T6 Hip	8 /12	29-00-00	9-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	263.53 164.00		
	2	T7 Hip	8 /12	29-00-00	10-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	268.04 168.67		
	8	T8 Common	8 /12	29-00-00	11-00-13	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	1079.44 674.67		
	1 2-ply	T20 Roof Special Girder	8 /12	29-00-00	4-07-04	2 x 4 2 x 6	1-03-08 1-05-00	1-04-13 1-04-13	275.94 172.33		
	1	T21 Hip Girder	8 /12	10-04-00	3-11-13	2 x 4 2 x 6	1-03-08 1-03-08	1-04-13 1-04-13	52.27 34.67		
	1	T22 Hip	8 /12	10-01-00	5-09-08	2 x 4	1-03-08	2-10-13 3-00-13	53.38 35.33		
	1 2-ply	T23 Flat Girder	0 /12	6-10-08	1-06-00	2 x 6		1-06-00 1-06-00	63.94 39.00		
	20	J1 Jack-Open	6 /12	5-10-08	4-01-04	2 x 4	1-03-08	1-02-00 4-01-04	335.85 213.33		
	3	J20 Jack-Open	6 /12	6-10-08	4-07-04	2 x 4	1-03-08	1-02-00 4-07-04	57.63 36.00		



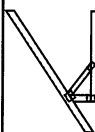
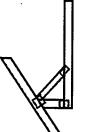
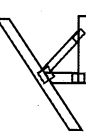
TAMARACK
 ROOF TRUSSES INC.
ALPHA LUMBER GROUP

DELIVERY SHIPLIST

Lumber Yard: TAMARACK LUMBER
Builder: ROYAL PINE HOMES
Project: CENTREFIELD
Location: RICHMOND HILL
Model: 38-14
Lot #:
Elevation: B-STD OR OPT.

Job Track: 51012
PlanLog: 204917
Layout ID: 419846
Ref #: 2 of 2
Page: 08-05-2021
Date:
Designer:
Sales Rep: Rick DiCiano

Roof Trusses

PROFILE	QTY PLY	MARK TYPE	PITCH	SPAN	HEIGHT	LUMBER	OVERHANG LEFT RIGHT	HEEL HEIGHT LEFT RIGHT	LBS. BFT.	BUNDLE # STACK #	LOAD BY REMARKS
	3	J21 Jack-Open	8 /12	3-10-08	3-11-13	2 x 4	1-03-08	1-04-13 3-11-13	42.51 27.00		
	2	C20 Jack-Open	8 /12	1-09-07	2-07-02	2 x 4	1-03-08 2-01-01	1-04-13 2-07-02	22.37 14.00		
	2	C21 Jack-Open	8 /12	1-09-07	2-07-02	2 x 4	1-03-08 1-01	1-04-13 2-07-02	17.81 11.33		

TOTAL # TRUSS= 58

TOTAL BFT OF ALL TRUSSES= 2392.66


BFT.

TOTAL WEIGHT OF ALL TRSSES 3812.99 LBS















HARDWARE

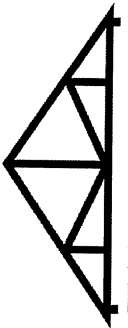
QTY	TYPE	MODEL	LENGTH
1	Hardware	HGUS26-2	
1	Hardware	LUS24	

TOTAL NUMBER OF ITEMS= 2

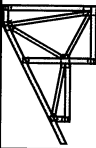
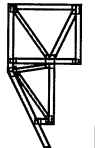
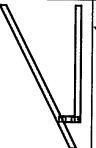
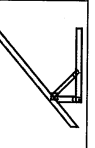
DELIVERY SHIPLIST			
 <p>TAMARACK ROOF TRUSSES INC. <small>ALPHA LUMBER GROUP</small></p>	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Lumber Yard: TAMARACK LUMBER Builder: ROYAL PINE HOMES Project: CENTREFIELD Location: RICHMOND HILL Model: 38-14 Lot #: Elevation: C-STD OR OPT. </td> <td style="width: 50%; vertical-align: top;"> Job Track: 51012 PlanLog: 204917 Layout ID: 419847 Ref #: 1 of 2 Page: 08-05-2021 Date: Designer: Sales Rep: Rick DiCiano </td> </tr> </table>	Lumber Yard: TAMARACK LUMBER Builder: ROYAL PINE HOMES Project: CENTREFIELD Location: RICHMOND HILL Model: 38-14 Lot #: Elevation: C-STD OR OPT.	Job Track: 51012 PlanLog: 204917 Layout ID: 419847 Ref #: 1 of 2 Page: 08-05-2021 Date: Designer: Sales Rep: Rick DiCiano
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Roof Trusses

PROFILE	QTY PLY	MARK TYPE	PITCH	SPAN	HEIGHT	LUMBER	OVERHANG LEFT RIGHT	HEEL HEIGHT LEFT RIGHT	LBS. BFT.	BUNDLE # STACK #	LOAD BY REMARKS
	1 2-ply	T1 Hip Girder	8 /12	29-00-00	4-01-04	2 x 4 2 x 6	1-03-08 1-03-08	1-04-13 1-04-13	270.74 165.33		
	2	T2 Hip	8 /12	29-00-00	5-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	232.06 146.67		
	2	T3 Hip	8 /12	29-00-00	6-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	252.46 160.00		
	2	T4 Hip	8 /12	29-00-00	7-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	255.97 162.33		
	2	T5 Hip	8 /12	29-00-00	8-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	269.05 168.00		
	2	T6 Hip	8 /12	29-00-00	9-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	263.53 164.00		
	2	T7 Hip	8 /12	29-00-00	10-01-04	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	268.04 168.67		
	7	T8 Common	8 /12	29-00-00	11-00-13	2 x 4	1-03-08 1-03-08	1-04-13 1-04-13	944.51 590.33		
	1 2-ply	T30 Roof Special Girder	8 /12	29-00-00	6-01-04	2 x 4 2 x 6	1-03-08 1-03-08	1-04-13 1-04-13	291.79 182.67		
	1	T31 Common Girder	8 /12	9-11-00	4-10-02	2 x 4 2 x 6	1-03-08	1-04-13 1-08-02	46.56 28.83		
	1	T32 Half Hip	8 /12	9-11-00	4-07-04	2 x 4	1-03-08	1-04-13 4-07-04	43.4 28.50		
	1	T33 Half Hip	8 /12	9-11-00	5-07-04	2 x 4	1-03-08	1-04-13 5-07-04	48.55 31.67		
	1 2-ply	T34 Jack-Closed Girder	6 /12	6-10-08	6-01-04	2 x 4 2 x 6		2-08-00 6-01-04	78.91 49.67		
	3	T35S Jack-Closed	6 /12	6-10-08	6-01-04	2 x 4	1-03-08	1-02-00 6-01-04	120.34 79.50		

 <div style="display: inline-block; vertical-align: middle; text-align: center;"> TAMARACK ROOF TRUSSES INC. <small>— ALPA LUMBER GROUP —</small> </div>		<h2 style="margin: 0;">DELIVERY SHIPLIST</h2>	
Lumber Yard: TAMARACK LUMBER Builder: ROYAL PINE HOMES Project: CENTREFIELD Location: RICHMOND HILL Model: 38-14 Lot #: Elevation: C-STD OR OPT.	Job Track: 51012 PlanLog: 204917 Layout ID: 419847 Ref #: 2 of 2 Page: 08-05-2021 Date: Designer: Sales Rep: Rick DiCiano		

Roof Trusses

PROFILE	QTY PLY	MARK TYPE	PITCH	SPAN	HEIGHT	LUMBER	OVERHANG LEFT RIGHT	HEEL HEIGHT LEFT RIGHT	LBS. BFT.	BUNDLE # STACK #	LOAD BY REMARKS
	1	T36S Half Hip	6 /12	6-10-08	5-05-13	2 x 4	1-03-08	1-02-00 5-05-13	41.4 27.17		
	1	T37S Half Hip	6 /12	6-10-08	4-01-13	2 x 4	1-03-08	1-02-00 4-01-13	37.76 25.50		
	18	J1 Jack-Open	6 /12	5-10-08	4-01-04	2 x 4	1-03-08	1-02-00 4-01-04	302.26 192.00		
	4	J30 Jack-Open	10 /12	3-10-08	4-10-06	2 x 4	1-03-08	1-07-10 4-10-06	60.88 38.67		

TOTAL # TRUSS= 55

TOTAL BFT OF ALL TRUSSES= 2409.51

BFT.

TOTAL WEIGHT OF ALL TRSSES 3828.22 LBS

HARDWARE

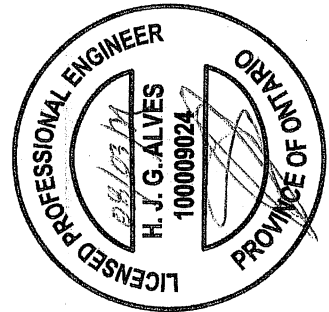
QTY	TYPE	MODEL	LENGTH
1	Hardware	LJS26DS	
7	Hardware	LUS24	
1	Hardware	HGUS26-2	

TOTAL NUMBER OF ITEMS= 9

PLATES (table is in inches)									
JT	TYPE	PLATES	W	LEN	Y	X	SPECIFIED CONCENTRATED LOADS (LBS)		
B	TMWV-t	MT20	5.0	6.0	2.50	1.75	LOC.	LC1	MAX-
C	TTWW-m	MT20	5.0	8.0	1.75	2.25	4-0-10	-40	---
D	TMWW-t	MT20	4.0	4.0			24-11-6	-171	---
E	TS-t	MT20	3.0	6.0			24-11-6	-40	---
F	TMW-w	MT20	2.0	4.0			24-11-6	-81	---
G	TMWW-t	MT20	4.0	4.0			24-11-6	-171	---
H	TTWW-m	MT20	5.0	8.0	1.75	2.25	25-0-12	-21	---
I	TMWW-t	MT20	5.0	6.0	2.50	1.75	5-0-12	-76	---
J	BMV1-p	MT20	3.0	6.0			7-0-12	-76	---
L	M, P, Q						9-0-12	-76	---
L	BMWW-t	MT20	5.0	6.0			11-0-12	-76	---
N	BS-t	MT20	5.0	6.0			13-0-12	-76	---
O	BMWWWW-t	MT20	5.0	8.0			15-0-12	-76	---
R	BMV1-p	MT20	3.0	6.0			17-0-12	-76	---
							19-0-12	-76	---
							21-0-12	-76	---
							23-0-12	-76	---
							1-0-12	-21	---
							3-0-12	-21	---
							5-0-12	-21	---
							7-0-12	-21	---
							9-0-12	-21	---
							11-0-12	-21	---
							13-0-12	-21	---
							15-0-12	-21	---
							17-0-12	-21	---
							19-0-12	-21	---
							21-0-12	-21	---
							23-0-12	-21	---
							27-0-12	-21	---

CONNECTION REQUIREMENTS

1) CT: A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED.



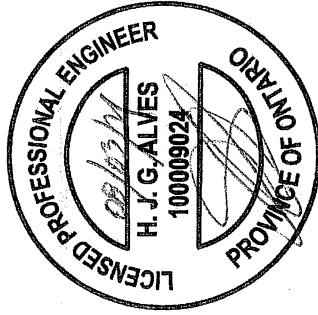
JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
419845	T1Z	1	2	ROYAL PINE HOMES	
Tamarack Roof Truss Burlington					

Version 8.420 S Jan 21 2021 Mitek Industries, Inc. Tue Aug 3 14:31:04 2021 Page 2

ID:pl42lF:qv5RgHJZ/n4JpT/nK9w-Ng1vSUGAHbf/E4PTXwnWdKRKHrS8NawIK74UsynYAL

PLATES (table is in inches)

JT TYPE	PLATES	W	LEN	Y	X
B	TMWW-I	MT20	5.0	6.0	2.00 1.75
C	TTWW-m	MT20	6.0	9.0	1.75 3.50
D	TMWW-I	MT20	4.0	4.0	
E	TS-I	MT20	3.0	6.0	
F	TMWW-w	MT20	2.0	4.0	
G	TMWW-I	MT20	4.0	6.0	
H	TTWW-m	MT20	6.0	9.0	1.75 3.75
I	TMWW-I	MT20	5.0	6.0	2.25 1.75
K	BMV1-p	MT20	3.0	6.0	
L, M, P, Q					
L	BMWW-I	MT20	5.0	6.0	
N	BS-I	MT20	5.0	6.0	
O	BMWWW-I	MT20	5.0	8.0	
R	BMV1-p	MT20	3.0	6.0	



Structural component only
DWG# T-2126194

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ID:pl42Fgw6FgJHJZ/h4JpTynK9w-Yh89F95LseO1hWEIW5pum1CDQY2MwRA00AdzTyrZJOU

1-3-8 0-0 5-1-9 5-1-9 4-1-1 10-0-10 4-5-6 14-0-0 4-5-6 18-1-5 4-1-1 23-10-7 29-0-0 30-3-8

Scale = 1:49,4



BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) Q, J	0/0	0/0	405/0	0/0
THIS TRUSS IS DESIGNED FOR RESIDENTIAL OF 6,000/12	0/0	0/0	405/0	0/0

TYPE	W	L	Y	X
PLATES				
M20	5.0	6.0		
TMW-t	4.0	4.0	2.00	1.50
TMW-w	M20	5.0	6.0	2.00
TMW+rt	M20	5.0	6.0	2.00

THIS DESIGN COMPLIES WITH:
 - PART 9 OF CBC 2018, ABC 2019
 - PART 9 OF CBC 2012 (2019 AMENDMENT)

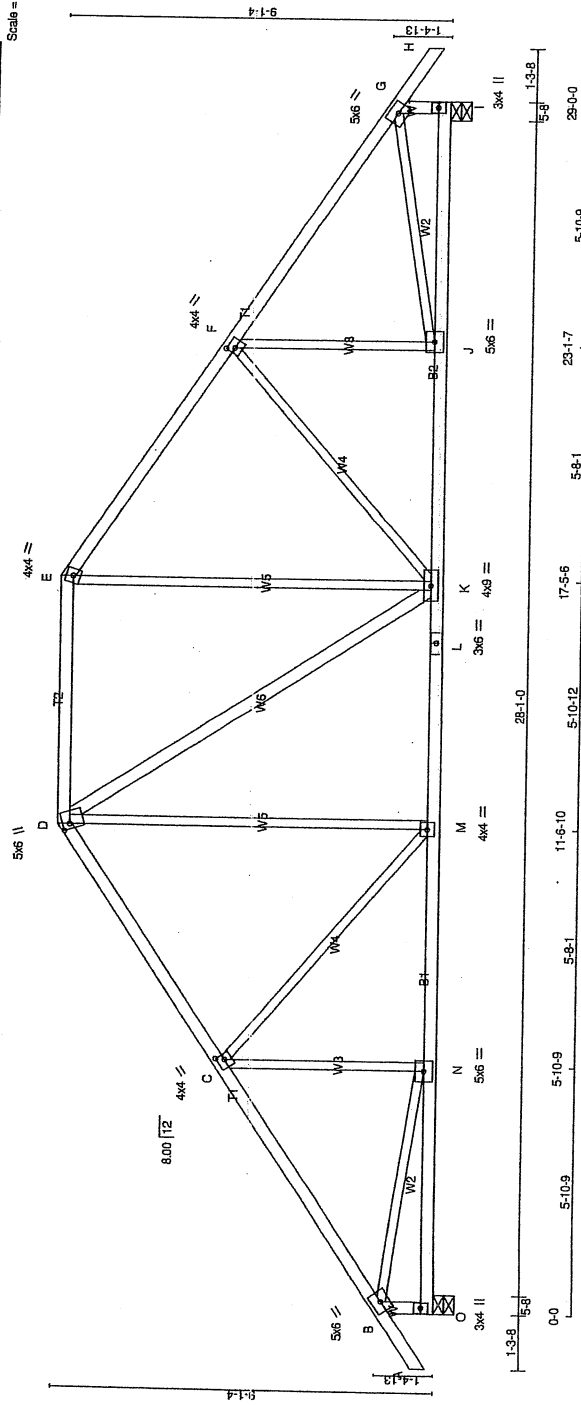
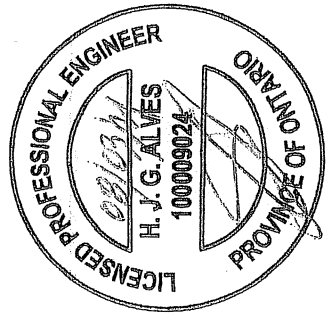
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.

	CHORDS		WEBS		(55% OF 31.3 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 25.6 P.S.F. SPECIFIED ROOF LIVE LOAD
	MAX. FACTORED	MAX. FACTORED	MAX. FACTORED	MAX. FACTORED	
TMWV-t	5.0	6.0			
BMV+P	3.0	4.0			
BMV-t	5.0	6.0			

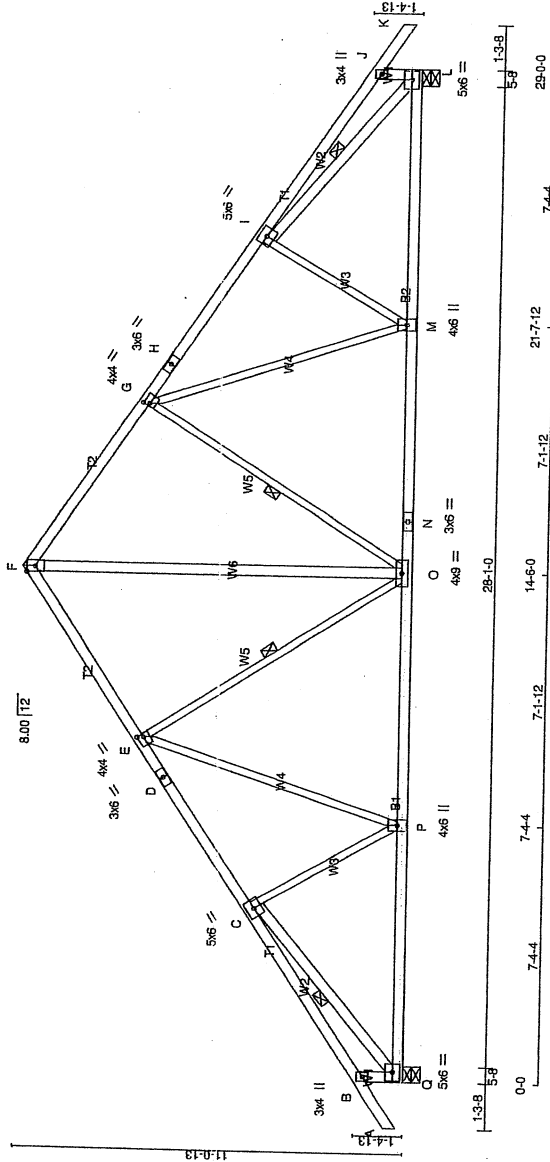
	PLATE	GRIP(DRY)	SHEAR (PSI)	SECTION (PLI)		
				MAX	MIN	
			MAX	MIN	MAX	MIN

The seal of the Province of Ontario is located in the bottom right corner. It features a circular design with the words "PROVINCE OF ONTARIO" around the perimeter. In the center is a shield with a plow and a sheaf of wheat, symbolizing agriculture. The shield is set against a background of diagonal lines.

[illegible][illegible]

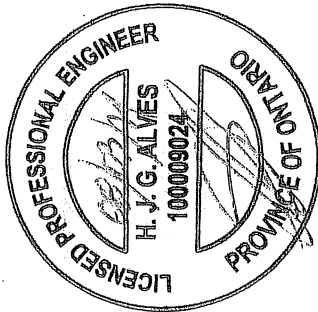
Structural component only
DWG# T-2126168

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	ROYAL PINE HOMES	DRAWG NO.
419799	T8	6	1	TRUSS DESC.		
-1-3-8 0-0 1-3-8 1	4-11-11	4-11-11	9-9-13	4-9-3	14-6-0	ID-pl42Fvgw5Fgjl-HJZYn4LpTyhk9w-yQqHUBYE9ZbcY_ZHDBMboQgk8m9y/F7IL_PhaoyrZUR
		4-9-3		4-9-3	19-3-3	Version 8.420 S Jan 21 2021 Milltek Industries, Inc. Tue Aug 3 13:01:22 2021 Page 1
				4-9-3	24-0-5	25-0-0 30-3-8
					4-11-11	1-3-8
				4x6 II		Scale = 1/8" = 1'-0"

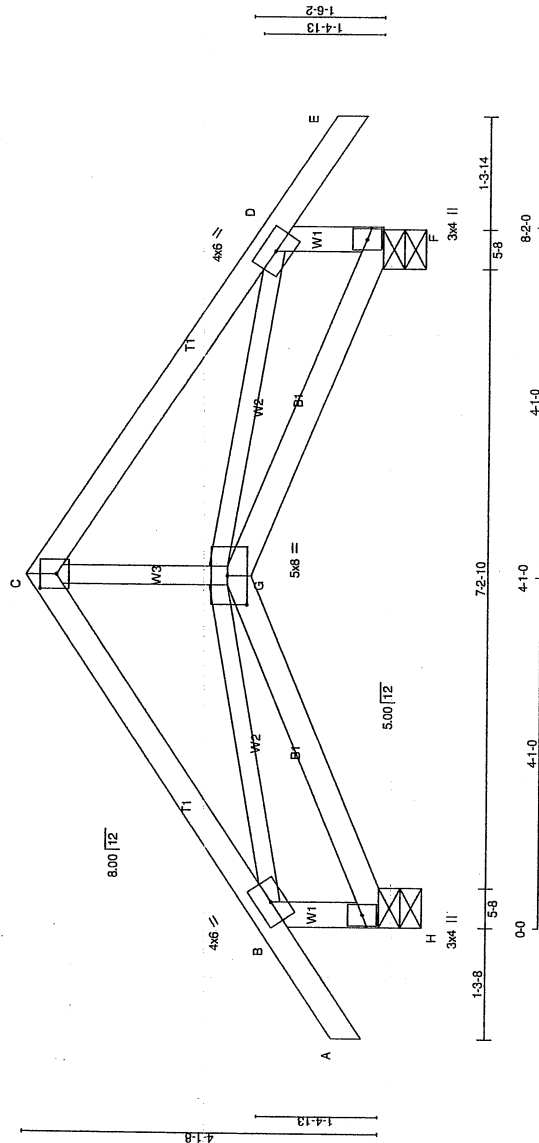
[illegible]

PLATES (table is in inches)		W	LEN	Y	X
PLATE TYPE	PLATE				
A	TMK-p	3.0	4.0		
B	TMK-p	3.0	6.0		
C	TMWV-1	3.0	6.0		
D	TS-1	3.0	6.0		
E	TMWV-1	4.0	4.0	2.00	1.00
F	TTW-p	4.0	6.0	Edge	
G	TMWV-1	4.0	4.0	2.00	1.00
H	TS-1	3.0	6.0		
I	TMWV-1	5.0	6.0		
J	TMV-p	3.0	4.0		
K	BMWV-1	5.0	6.0		
L	BMWV-1	4.0	6.0		
M	BMWV-1	5.0	6.0		
N	BS-1	3.0	6.0		
O	BMWV-1	4.0	9.0		
P	BMWV-1	4.0	6.0		
Q	BMWV-1	5.0	6.0		

Edge - INDICATES REFERENCE CORNER OF PLATE TOUCHES EDGE OF CHORD.



Structural component only
DWG# T-2126170



LUMBER				DESCR.			
N L G A	RULES	CHORDS	SIZE	LUMBER	DRY	LEN	Y X
A - C	2x4	SPF	No.2	SPF	DRY	4.0	6.0
C - E	2x4	SPF	No.2	SPF	DRY	4.0	4.0
H - B	2x4	SPF	No.2	SPF	DRY	4.0	2.25
F - D	2x4	SPF	No.2	SPF	DRY	3.0	4.0
H - G	2x4	SPF	No.2	SPF	DRY	5.0	8.0
G - F	2x4	SPF	No.2	SPF	DRY	3.0	4.0
ALL WEBS	2x3	DRY	No.2	SPF	EXCEPT		
DRY: SEASONED LUMBER.							

UNFACTORED REACTIONS				1ST L CASE			
JT	COMBINED	SNOW	LIVE	PERM.	LIVE	WIND	SOIL
H	405	279 / 0	0 / 0	0 / 0	0 / 0	0 / 0	126 / 0
F	405	279 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) H, F

BRACING
TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 6.25 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

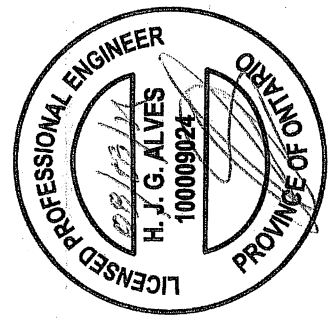
ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE LATERALLY RESTRAINED.

LOADING
TOTAL LOAD CASES: (4)

CHORDS				W E B S			
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	MAX. CSI (LC)	MAX. UNBRACED LENGTH FR-TO	MEMB. G-C	MAX. FORCE (LBS)	FACTORED MAX CSI (LC)
FR-TO		FROM TO					
A-B	0 / 35	-91.8 -91.8	0.12 (1)	10.00	G-C	0 / 163	0.04 (4)
B-C	-485 / 0	-91.8 -91.8	0.20 (1)	6.25	B-G	0 / 406	0.09 (1)
C-D	-485 / 0	-91.8 -91.8	0.20 (1)	6.25	G-D	0 / 406	0.09 (1)
D-E	0 / 35	-91.8 -91.8	0.12 (1)	10.00			
H-B	-538 / 0	0.0 0.0	0.06 (1)	7.81			
F-D	-538 / 0	0.0 0.0	0.06 (1)	7.81			
H-G	0 / 0	-18.5 -18.5	0.09 (4)	10.00			
G-F	0 / 0	-18.5 -18.5	0.09 (4)	10.00			

DESIGN CRITERIA			
SPECIFIED LOADS:			
TOP CH.	LL = 25.6 PSF		
BOT CH.	LL = 6.0 PSF		
	DL = 0.0 PSF		
	DL = 7.4 PSF		
TOTAL LOAD	= 39.0 PSF		
SPACING	= 24.0 IN./C/C		
THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBC 2015			
THIS DESIGN COMPLIES WITH:			
- PART 9 OF CBC 2018, ABC 2019			
- PART 9 OF CBC 2012 (2019 AMENDMENT)			
- CSA 086-14			
- TPIC 2014			
(55 % OF 31.3 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 25.6 P.S.F. SPECIFIED ROOF LIVE LOAD			
ALLOWABLE DEFLECTION (LL) = L/360 (0.27")			
CALCULATED VERT. DEFLECTION (LL) = L/999 (0.01")			
ALLOWABLE DEFLECTION (TL) = L/360 (0.27")			
CALCULATED VERT. DEFLECTION (TL) = L/999 (0.02")			
CSI: TC=0.20/1.00 (C-D:1), BC=0.09/1.00 (F-G:4), WB=0.09/1.00 (B-G:1), SSI=0.12/1.00 (C-D:1)			
DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10 COMP=1.10 SHEAR=1.10 TENS=1.10			
COMPANION LIVE LOAD FACTOR = 1.00			
TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT.			
NAIL VALUES			
PLATE	GRIP(DRY)	SHEAR	SECTION (PSI)
MAX MIN	MAX MIN	MAX MIN	(F-U)
MT20	650 371	1747 788	1987 1873
PLATE PLACEMENT TOL. = 0.250 inches			
PLATE ROTATION TOL. = 5.0 Deg.			
JSI GRIP = 0.32 (D) (INPUT = 0.90)			
JSI METAL = 0.15 (D) (INPUT = 1.00)			

TOTAL WEIGHT = 36 lb



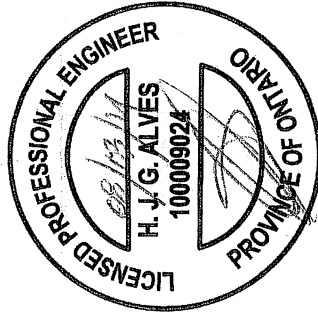
JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	ROYAL PINE HOMES	DRWG NO.
419845	T12	1	2	TRUSS DESC.		

Tamarack Roof Truss, Burlington

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Version 8.420 5 Jan 21 2021 MiTek Industries, Inc. Tue Aug 3 14:31:08 2021 Page 2

PLATES (table is in inches)
 WT TYPE PLATES W LEN Y X
 F BMV1+p MT20 3.0 6.0



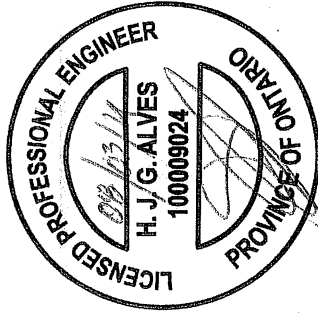
Structural component only
 DWG# T-2126200 *YAL*

JOB NAME 419845 Tamarack Roof Truss, Burlington	TRUSS NAME T12Z	QUANTITY 1	PLY 2	JOB DESC. ROYAL PINE HOMES	DRWG NO.
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Version 8.420 S Jan 21 2021 MiTek Industries, Inc. Tue Aug 3 14:31:09 2021 Page 2

ID:pl421F.vgw5RqjHJZyn4UpT.vhk9w-idgoVBKJ.VjIFKridG5WsDhRP6fXpntfSbr93yYAG

PLATES (table is in inches)
 IT TYPE PLATES W LEN Y X
 F BMV1+p MT20 3.0 6.0



Structural component only
 DWG# T-2126201 *mm*

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	ROYAL PINE HOMES	DRWG NO.
419846	T20	1	2	TRUSS DESC.		
Tamarack Roof Truss, Burlington						

Version 8.420 5 Jan 21 2021 Mitek Industries, Inc. Tue Aug 3 14:39:22 2021 Page 2

ID:pl42fEvgw5RqH4ZVn4JpTvk9w-nT7AzmiYPBPi cJNe7sTieMUy1DpWzEpmRv vrY2Z

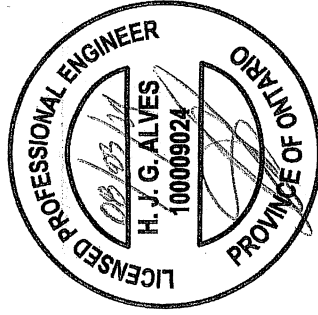
PLATES (table is in inches)

JT TYPE	W	LEN	Y	X
B TMVW-p	5.0	8.0	1.50	3.00
C TTWW-m	5.0	8.0	1.75	2.75
D TMVW-l	4.0	4.0	2.75	2.25
E TTWW-m	5.0	8.0	1.75	3.00
F TMVW-l	5.0	8.0	2.00	1.75
G TTWW-m	4.0	4.0	2.00	1.75
H TMVW-p	5.0	8.0	2.00	1.75
I TMVW-l	5.0	8.0	2.00	1.75
J TMVW-p	5.0	8.0	2.00	1.75
K BMVW-l	5.0	8.0	2.00	1.75
L BMVW-l	5.0	8.0	2.00	1.75
M BMVW-l	5.0	8.0	2.00	1.75
N P.O.	7.0	8.0		
O BMVW-l	5.0	8.0		
P BS-l	5.0	8.0		
R BMVW-p	3.0	6.0		

JT	LOC.	LC1	MAX-	MAX+	FACE	DIR.	TYPE	HEEL	CONN.
T	7-9-4	-78	-78	---	FRONT	VERT	TOTAL	---	C1
U	11-9-4	-78	-78	---	FRONT	VERT	TOTAL	---	C1
V	17-9-4	-100	-100	---	FRONT	VERT	TOTAL	---	C1
W	1-9-4	-21	-21	---	FRONT	VERT	TOTAL	---	C1
X	3-9-4	-21	-21	---	FRONT	VERT	TOTAL	---	C1
Y	5-9-4	-21	-21	---	FRONT	VERT	TOTAL	---	C1
Z	7-9-4	-21	-21	---	FRONT	VERT	TOTAL	---	C1
AA	11-9-4	-21	-21	---	FRONT	VERT	TOTAL	---	C1
AB	13-9-4	-27	-27	---	FRONT	VERT	TOTAL	---	C1
AC	17-9-4	-27	-27	---	FRONT	VERT	TOTAL	---	C1
AD	18-9-8	-909	-909	---	FRONT	VERT	TOTAL	---	C1

CONNECTION REQUIREMENTS

1) C1: A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED.



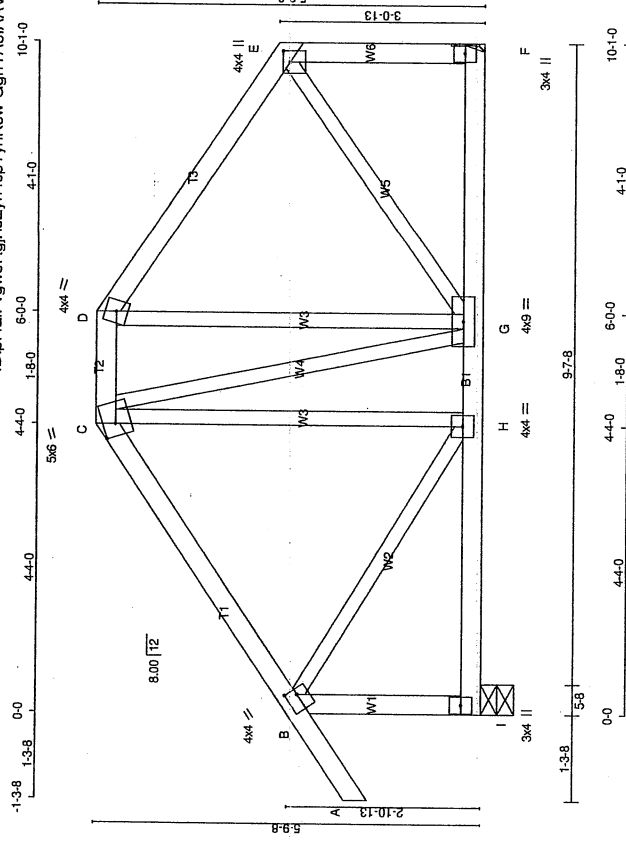
Structural component only
DWG# T-2126206

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	ROYAL PINE HOMES	DRWG NO.
419846	T22	1	1	TRUSS DESC.		

Tamarack Roof Truss, Burlington

Version 8.420 S Jan 21 2021 MitTek Industries, Inc. Tue Aug 3 14:39:23 2021 Page 1
ID:pl42fvgw5RgjhJZy4h4JpTyhK9w-GghYA6IAAAVX9bm3ZCrNiEsvnxQI8Y6XN2SV VQRvY2v

Scale = 1:32.9



LUMBER				DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER										DESIGN CRITERIA		TOTAL WEIGHT = 53		[M/F]			
N.L.G. A. RULES				BEARINGS																	
C-H-O-C																					
A - A				FACTORED										MAXIMUM		FACTORED		INPUT		REQRD	
C - D				GROSS REACTION										GROSS REACTION		BRG		BRG			
D - E				DOWN HORZ										UPLIFT		IN-SX		IN-SX			
I - B				JT										892		0		5-8			
F - E				F										556		0		MECHANICAL			
I - F																					
ALL WEBS EXCEPT				A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED AT JOINT F. MINIMUM BEARING LENGTH AT JOINT F = 1'-8".																	
																				</	

UNFAIRED REACTIONS
OF 6.00/1.2
LOADING IN FLAT SECTION BASED ON A SLOPE

[illegible]

WORKING LIVE LOAD

TOTAL LOAD CASES: (4)

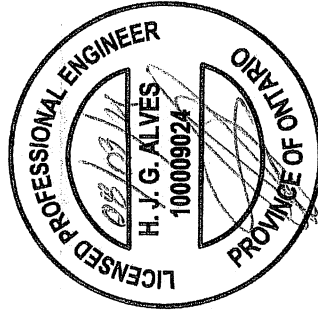
C H O R D S		F A C T O R E D		W E B S		C S I (L C)	
MEMB.	FORCE (LBS)	VERT. LOAD (LBS)	LCI (PLF)	MAX. UNBRGTH	MEMB. FR-TO	FORCE (LBS)	MAX. CSI (L C)
FR-TO		FROM	TO				
A-B	0 / 35	-91.8	-91.8	0.12 (1)	10.00	H-C	83 / 19
B-C	-310 / 0	-91.8	-91.8	0.22 (1)	6.25	C-G	-20 / 0
C-D	-251 / 0	-91.8	-91.8	0.03 (1)	6.25	G-D	-94 / 12
D-E	-304 / 0	-91.8	-91.8	0.20 (1)	6.25	B-H	0 / 298
F-B	-647 / 0	0.0	0.0	0.10 (1)	7.81	G-E	0 / 302
F-E	-522 / 0	0.0	0.0	0.09 (1)	7.81		

ALLOWABLE DEFL.(LL)= L/360 (0.34")
 CALCULATED VERT. DEFL.(LL) = L/999 (0.00")
 ALLOWABLE DEFL.(TL)= L/360 (0.34")
 CALCULATED VERT. DEFL.(TL) = L/999 (0.01")
 CSI: TC=0.22/1.00 (B-C:1) , BC=0.09/1.00 (G-H:4) ,
 WB=0.07/1.00 (E-G:1) , SS=0.13/1.00 (B-C:1) ,
 DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10
 COMP=1.10 SHEAR=1.10 TENS=1.10
 COMPANION LIVE LOAD FACTOR = 1.00

H-G	0/256	-18.5	-18.5	0.09 (4)	10.00
G-F	0/0	-18.5	-18.5	0.07 (4)	10.00

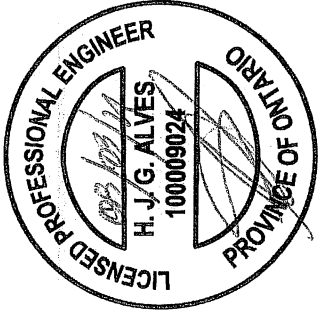
TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT.

02/09/14
H. J. G. ALVES
LICENSED PROFESSIONAL ENGINEER



Structural component only
DWG# T-2126208

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	TRUSS DESC.	DRWG NO.
419846 Tamarack Roof Truss, Burlington	T23	1	2	ROYAL PINE HOMES		
Version 8.420 S Jan 21 2021 Mitek Industries, Inc. Tue Aug 3 14:39:24 2021 Page 2 ID:pl42\Frgw5RqHHzv4JbTynKgw-KsEwOSJoxp0DwelmYuxn3RvggCHVpWH6FY1vry2X						
PLATES (table is in inches) JT TYPE PLATES W LEN Y X F BMV1+p MT20 3.0 6.0						



Structural component only
 DWG# T-2126209 *HL*

JOB NAME

419847

JOB NAME

T30

JOB NAME

Tamarack Roof Truss, Burlington

QUANTITY

1

PLY

2

JOB DESC.

ROYAL PINE HOMES

JOB DESC.

TRUSS DESC.

DRWG NO.

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ID:pl42lFvw6RgH-LZyH4JpTYhK9w-We23uxtn7XNkvrvVB3iNmD3AHsiYL4k15bmTavY7D

PLATES (table is in inches)

JT	TYPE	PLATES	W	LEN	Y	X
B	TMW-p	MT20	5.0	6.0	1.50	3.00
C	TTMW-m	MT20	5.0	9.0	Edge	4.25
D	TTMW-m	MT20	5.0	6.0	3.25	2.00
E	TTMW-m	MT20	5.0	8.0	Edge	
F	TMW-w	MT20	2.0	4.0		
G	TTMW-m	MT20	5.0	8.0	1.75	3.50
H	TTMW-w	MT20	4.0	4.0	2.00	1.50
K	TMW-p	MT20	5.0	6.0	1.50	3.00
L	BMV1-p	MT20	3.0	6.0		
L	M, P, Q					
N	BMWW-1	MT20	5.0	6.0		
O	BS-1	MT20	5.0	6.0		
R	BMWW-1	MT20	5.0	6.0	2.50	2.75
S	BMV1-p	MT20	3.0	6.0		

Edge - INDICATES REFERENCE CORNER OF PLATE TOUCHES EDGE OF CHORD.

SPECIFIED CONCENTRATED LOADS (LBS)

JT	LOC.	LC1	MAX-	MAX+
Y	7-5-4	-21	-21	
Z	11-5-4	-253	-253	
AA	13-5-4	-253	-253	
AB	15-5-4	-253	-253	
AC	17-5-4	-253	-253	
AD	18-11-8	-945	-945	

CONNECTION REQUIREMENTS

1) C1: A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED.

FACE

DIR.

TYPE

HEEL

CONN.

FRONT

VERT

TOTAL

C1

FRONT

VERT

TOTAL

C1

FRONT

VERT

TOTAL

C1

FRONT

VERT

TOTAL

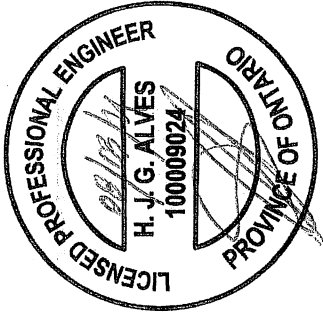
C1

FRONT

VERT

TOTAL

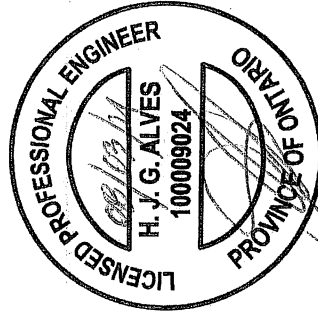
C1



JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	ROYAL PINE HOMES	DRWG NO.
419847	T34	1	2	TRUSS DESC.		
Tamarack Roof Truss, Burlington						

Version 8.420 S Jan 21 2021 MITek Industries, Inc. Tue Aug 3 14:42:59 2021 Page 2
ID:pl42Fvgw5RgtHJZM4JpTvhK9w-xDkCVzwdISIWWZZsCFM7PrOV 29n9A[3cQ4wY?A

PLATES (table is in inches)
JT TYPE PLATES W LEN Y X
F BMW1+P MT20 3.0 6.0



Structural component only
DWG# T-2126215 *ML*

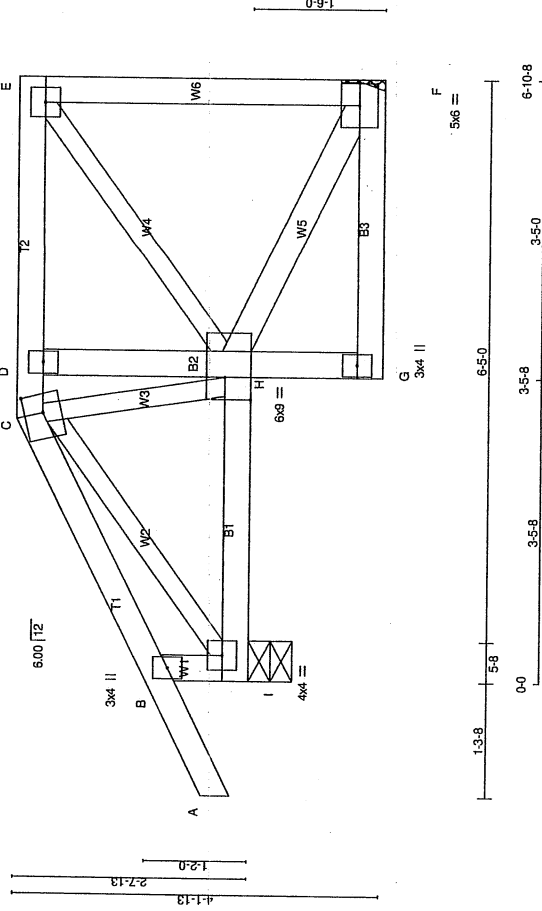
JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	ROYAL PINE HOMES	DRWG NO.
419847	T375	1	1	TRUSS DESC.		

Tamarack Roof Truss, Burlington

Version 8.420 S Jan 21 2021 Mitek Industries, Inc. Tue Aug 3 14:43:01 2021 Page 1
ID:pl42Fvgv5RgJHJZyn4Jp1YnK9w-tcsyxwqU?D[G]TzdHq4x2BliAdJETANUX9oyrY?8

-1-3-8 1-3-8 0-0 2-11-10 2-11-10 2-11-10 3-5-0 3-5-0 6-10-8

Scale = 1/25.0



DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER

BEARINGS	FACTORED	MAXIMUM FACTORED	INPUT	RECORD
JT	GROSS REACTION	GROSS REACTION	BRG	BRG
F	VERT	DOWN	UPLIFT	IN-SX
I	379	0	0	MECHANICAL
I	503	0	5-8	5-8

A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED AT JOINT F. MINIMUM BEARING LENGTH AT JOINT F = 1-8.

UNFACTORED REACTIONS

JT	1ST LOSE	SNOW	LIVE	PERM LIVE	WIND	DEAD	SOIL
F	268	176/0	0/0	0/0	0/0	82/0	0/0
I	354	245/0	0/0	0/0	0/0	108/0	0/0

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) I

BRACING

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 6-25 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 7-8 FT OR RIGID CEILING DIRECTLY APPLIED.
ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.

LOADING

TOTAL LOAD CASES: (4)

Edge - INDICATES REFERENCE CORNER OF PLATE TOUCHES EDGE OF CHORD.

PLATES (table is in inches)

JT	TYPE	PLATES	W	LEN	Y	X
B	TMV+P	MT20	3.0	4.0		
C	TTWW-m	MT20	5.0	6.0	2.50	2.50
D	TMV+P	MT20	3.0	4.0		
E	TMVW-1	MT20	4.0	4.0		
F	BMVW1-t	MT20	5.0	6.0		
G	BMV+P	MT20	3.0	4.0		
H	BYMWVW-1	MT20	6.0	9.0	Edge	3.00
I	BMVW1-t	MT20	4.0	4.0		

DESIGN CRITERIA

SPECIFIED LOADS:
TOP CH. LL = 25.6 PSF
DL = 6.0 PSF
BOT CH. LL = 0.0 PSF
DL = 7.4 PSF
TOTAL LOAD = 39.0 PSF
SPACING = 24.0 IN./C

LOADING IN FLAT SECTION BASED ON A SLOPE OF 6.00/12

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBC 2015

THIS DESIGN COMPLIES WITH:

- PART 9 OF CBC 2018, ABC 2019
- PART 9 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPC 2014

(55 % OF 31.3 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 25.6 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEF'L (LL) = L/360 (0.23")
CALCULATED VERT. DEF'L (LL) = L/999 (0.01")
ALLOWABLE DEF'L (TL) = L/360 (0.23")
CALCULATED VERT. DEF'L (TL) = L/999 (0.01")

CSI: TC=0.14/1.00 (B-C1), BC=0.09/1.00 (H-I4), WB=0.08/1.00 (E-H1), SS=0.14/1.00 (D-E1)

DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10 COMP=1.10 SHEAR=1.10 TENS=1.10

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE RIGHT HEEL ONLY

TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT.

NAIL VALUES

PLATE GRIP(DRY) SHEAR SECTION (PLJ) (PLJ)

MAX MIN MAX MIN

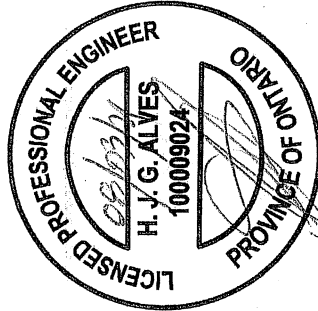
MT20 650 371 1747 788 1987 1873

PLATE PLACEMENT TOL. = 0.250 inches

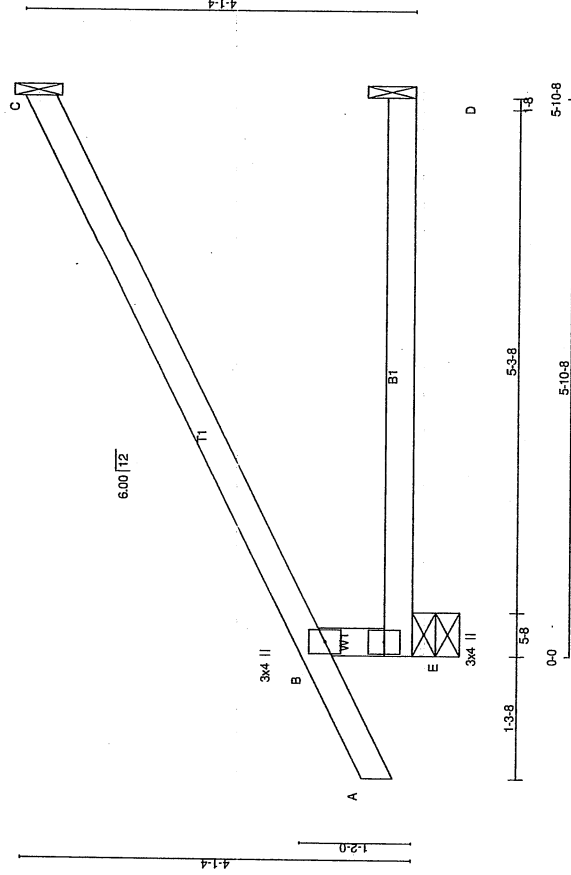
PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.36 (C) (INPUT = 0.90)

JSI METAL= 0.10 (E) (INPUT = 1.00)



Structural component only
DWG# T-2126218



TOTAL WEIGHT = 16 X 17 = 269 [N]

DESIGN CRITERIA

SPECIFIED LOADS:

TOP CH.	LL	=	25.6	PSF
BOT CH.	LL	=	6.0	PSF
BOT CH.	LL	=	0.0	PSF
TOTAL LOAD	=	39.0	PSF	

SPACING = 24.0 IN./C

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBC 2015

THIS DESIGN COMPLIES WITH:

- PART 9 OF BCBC 2018, ABC 2019
- PART 9 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS

- OVERHANG NOT TO BE ALTERED OR CUT OFF.
- (55 % OF 31.3 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 25.6 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFLECT (LL) = L/360 (0.20")

CALCULATED VERT. DEFLECT (LL) = L/999 (0.00")

ALLOWABLE DEFLECT (TL) = L/360 (0.20")

CALCULATED VERT. DEFLECT (TL) = L/999 (0.03")

CSI: TC=0.54/1.00 (B-C:1), BC=0.13/1.00 (D-E:4), WB=0.00/1.00 (nao), SSI=0.24/1.00 (B-C:1)

DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10

COMP=1.10 SHEAR=1.10 TENS=1.10

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE RIGHT HEEL ONLY

TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT.

NAIL VALUES

PLATE GRIP(DRY) SHEAR SECTION

(PSI) (PLI) (PLI)

MAX MIN MAX MIN MAX MIN

MT20 650 371 1747 788 1987 1873

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.18 (E) (INPUT = 0.90)

JSI METAL= 0.13 (B) (INPUT = 1.00)

DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER

BEARINGS

JT	DESCR.	FACTORED	GROSS REACTION	MAXIMUM	FACTORED	INPUT	RECORD
JT	VERT	HORIZ	DOWN	HORIZ	UPLIFT	IN-SX	BRG
E	525	0	525	0	0	5-8	IN-SX
C	202	0	202	0	0	1-8	5-8
D	45	0	50	0	0	1-8	1-8

SEE MITEK STANDARD DETAIL B97791H FOR CONNECTION TO JOINT(S) C, D

UNFACTORED REACTIONS

JT	1ST LOOSE	MAX./MIN.	COMPONENT REACTIONS	WIND	DEAD	SOIL
JT	COMBINED	SNOW	LIVE	PERM.LIVE	111/0	0/0
E	369	257/0	0/0	0/0	0/0	0/0
C	139	113/0	0/0	0/0	26/0	0/0
D	36	0/0	0/0	0/0	36/0	0/0

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) E

BRACING

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 6.25 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT. OR RIGID CEILING DIRECTLY APPLIED.

ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.

LOADING

TOTAL LOAD CASES: (4)

CHORDS	MEMB.	MAX. FACTORED	FACTORED	VERT. LOAD	LC1	MAX	MAX.	MEMB.	W E B S	MAX.
		(LBS)	(PLF)	FROM	TO	CSI (LC)	UNBRAC	LENGTH	FR-TO	FORCE
E-B	-461/0	0.0	0.0	0.0	0.13 (4)	7.81				MAX
A-B	0/28	-91.8	-91.8	0.12 (1)	10.00					(LBS)
B-C	-30/0	-91.8	-91.8	0.54 (1)	6.25					
E-D	0/0	-18.5	-18.5	0.13 (4)	10.00					

DESCR.
SPF
SPF
SPF

LUMBER
No.2
No.2
No.2

SIZE
2x4
2x4
2x4

PLATES (table is in inches)

JT TYPE
W LEN Y X
3.0 4.0
3.0 4.0

Structural component only
DWG# T-2126192

JOB NAME

419846

JOB DESC.

ROYAL PINE HOMES

TRUSS NAME

J20

QUANTITY

3

PLY

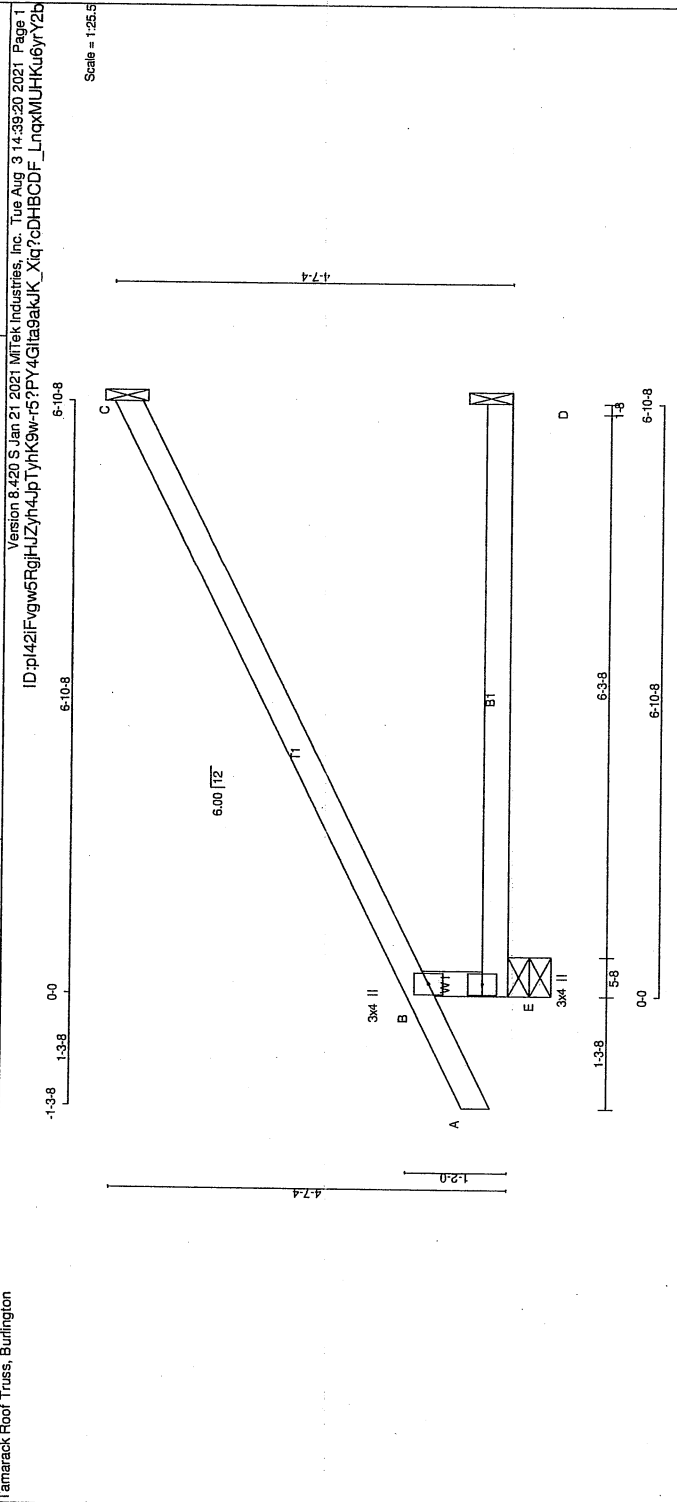
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DRWG NO.

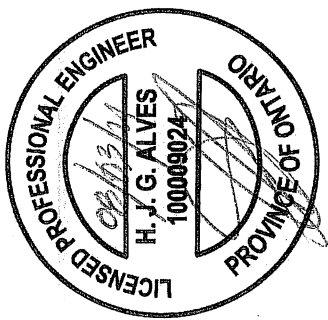
Tamarack Roof Truss, Burlington

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<div><div>LUMBER</div><div>N.L.G.A. RULES</div><div>CHORDS</div><div>E - B</div><div>A - C</div><div>E - D</div><div>DRY: SEASONED LUMBER.</div></div> <div><div>LUMBER</div><div>No.2</div><div>No.2</div><div>No.2</div><div></div></div> <div><div>W</div><div>LEN</div><div>Y</div><div>X</div><div>3.0</div><div>4.0</div><div>3.0</div><div>4.0</div></div>	<div><div>DESCR.</div><div>SPF</div><div>SPF</div><div>SPF</div><div></div></div> <div><div>JT</div><div>E</div><div>C</div><div>D</div><div></div></div> <div><div>FACTORED</div><div>GROSS REACTION</div><div>DOWN</div><div>594</div><div>0</div><div>237</div><div>0</div><div>58</div><div>0</div></div> <div><div>MAXIMUM</div><div>FACTORED</div><div>GROSS REACTION</div><div>DOWN</div><div>594</div><div>0</div><div>237</div><div>0</div><div>58</div><div>0</div></div> <div><div>INPUT</div><div>BRG</div><div>UP/LIFT</div><div>IN-SX</div><div>5-8</div><div>1-8</div><div>1-8</div><div>1-8</div></div> <div><div>RECORD</div><div>BRG</div><div>IN-SX</div><div>5-8</div><div>1-8</div><div>1-8</div><div>1-8</div></div>	<div><div>UNFACTORED REACTIONS</div><div>TEST LOOSE</div><div>COMBINED</div><div>SNOW</div><div>289 / 0</div><div>132 / 0</div><div>0 / 0</div><div>0 / 0</div></div> <div><div>MAX. / MIN.</div><div>COMPONENT REACTIONS</div><div>LIVE</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div></div> <div><div>PERM. LIVE</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div></div> <div><div>WIND</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div></div> <div><div>DEAD</div><div>128 / 0</div><div>31 / 0</div><div>42 / 0</div><div>0 / 0</div></div> <div><div>SOIL</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div><div>0 / 0</div></div>	<div><div>BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) E</div><div>BRACING</div><div>TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 6.25 FT.</div><div>MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT. OR RIGID CEILING DIRECTLY APPLIED.</div><div>ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.</div></div> <div><div>LOADING</div><div>TOTAL LOAD CASES: (4)</div><div>CHORDS</div><div>MEMB.</div><div>FACTORED</div><div>VERT. LOAD</div><div>LC1</div><div>MAX</div><div>MAX</div><div>MEMB.</div><div>LENGTH</div><div>FR-TO</div><div>E-B</div><div>-519 / 0</div><div>0.0</div><div>0.0</div><div>0.16 (4)</div><div>7.81</div><div>A-B</div><div>0 / 28</div><div>-91.8</div><div>-91.8</div><div>0.12 (1)</div><div>10.00</div><div>B-C</div><div>-35 / 0</div><div>-91.8</div><div>-91.8</div><div>0.57 (1)</div><div>6.25</div><div>E-D</div><div>0 / 0</div><div>-18.5</div><div>-18.5</div><div>0.19 (4)</div><div>10.00</div></div> <div><div>W E B S</div><div>MAX. FACTORED</div><div>FORCE</div><div>MAX</div><div>CS (LC)</div><div>CS (LC)</div></div>	<div><div>DESIGN CRITERIA</div><div>SPECIFIED LOADS:</div><div>TOP CH. LL = 25.6 PSF</div><div>BOT CH. LL = 0.0 PSF</div><div>TOTAL LOAD = 39.0 PSF</div><div>SPACING = 24.0 IN. C/C</div><div>THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBC 2015</div><div>THIS DESIGN COMPLIES WITH:</div><div>- PART 9 OF CBC 2018, ABC 2019</div><div>- PART 9 OF CBC 2012 (2019 AMENDMENT)</div><div>- CSA 086-14</div><div>- TPO 2014</div><div>DESIGN ASSUMPTIONS</div><div>- OVERHANG NOT TO BE ALTERED OR CUT OFF.</div><div>(55 % OF 31.3 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 25.6 P.S.F. SPECIFIED ROOF LIVE LOAD</div><div>ALLOWABLE DEFL. (LL) = L/360 (0.23")</div><div>CALCULATED VERT. DEFL. (LL) = L/999 (0.00")</div><div>ALLOWABLE DEFL. (TL) = L/360 (0.23")</div><div>CALCULATED VERT. DEFL. (TL) = L/999 (0.06")</div><div>CSI: TC=0.5711.00 (B-C:1), BC=0.191.00 (D-E:4), WB=0.001.00 (max), SS=0.281.00 (B-C:1)</div><div>DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10 COMP=1.10 SHEAR=1.10 TENS=1.10</div><div>COMPANION LIVE LOAD FACTOR = 1.00</div><div>AUTOSOLVE RIGHT HEEL ONLY</div><div>TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT.</div><div>NAIL VALUES</div><div>PLATE GRIP(DRY) SHEAR SECTION (PL)</div><div>MAX MIN MAX MIN</div><div>MT20 650 371 1747 788 1987 1873</div><div>PLATE PLACEMENT TOL. = 0.250 inches</div><div>PLATE ROTATION TOL. = 5.0 Deg.</div><div>JSI GRIP= 0.21 (E) (INPUT = 0.90)</div><div>JSI METAL= 0.14 (B) (INPUT = 1.00)</div></div>
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Structural component only
DWG# T-2126204

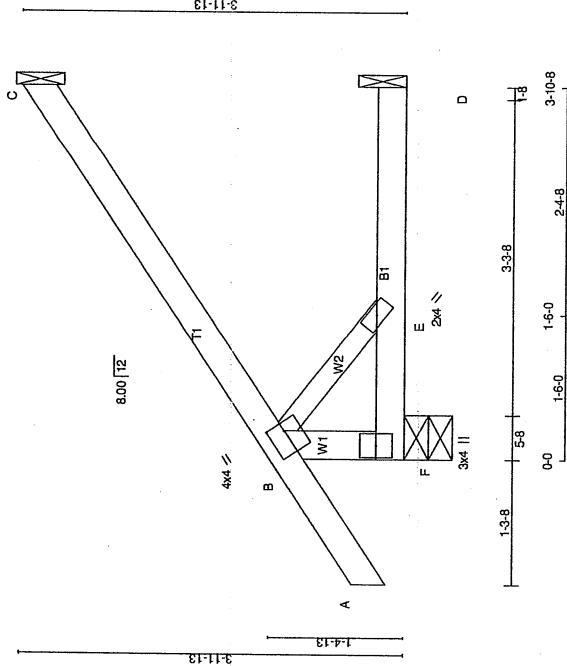
JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	ROYAL PINE HOMES	DRWG NO.
419846	J21	3	1	TRUSS DESC.		

Tamarack Roof Truss, Burlington

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ID:pl42fFvgw5RgjHJZyh4JpTyhK9w-JHZomQHweuHRMSvBSQLE9RpREdc4E44a80IQYyY2a

-13-8 1-3-8 0-0 3-10-8 3-10-8

Scale = 1/22.8



TOTAL WEIGHT = 3 X 14 = 43 lb

DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER

BEARINGS	FACTORED	MAXIMUM	FACTORED	INPUT	REQD
JT	GROSS REACTION	GROSS REACTION	DOWN	UP	BRG
F	340	340	0	0	5-8
C	178	178	0	0	1-8
D	36	40	0	0	1-8

SEE MITEK STANDARD DETAIL 987791H FOR CONNECTION TO JOINT(S) C, D

UNFACTORED REACTIONS

JT	1ST LOSE	MAX. MIN.	COMPONENT REACTIONS	WIND	DEAD	SOIL
F	238	169/0	0/0	0/0	66/0	0/0
C	122	99/0	0/0	0/0	23/0	0/0
D	29	0/0	0/0	0/0	29/0	0/0

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) F

BRACING

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 10.00 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.

LOADING

TOTAL LOAD CASES: (5)

MEMB.	CHORDS	MAX. FACTORED	FACTORED	VERT. LOAD	LC1	MAX.	MEMB.	MAX.	FACTORED
F-B	-304/0	0/0	0/0	0.03 (1)	7.81	B-E	0/0	0.00 (1)	0.00 (1)
A-B	0/35	-91.8	-91.8	0.14 (5)	10.00				
B-C	0/0	-91.8	-91.8	0.23 (1)	10.00				
F-E	0/0	-18.5	-18.5	0.08 (4)	10.00				
E-D	0/0	-18.5	-18.5	0.08 (4)	10.00				

CANTILEVER ANALYSIS HAS BEEN CONSIDERED IN THIS DESIGN

DESIGN CRITERIA

SPECIFIED LOADS:
TOP CH. LL = 25.6 PSF
DL = 6.0 PSF
BOT CH. LL = 0.0 PSF
DL = 7.4 PSF
TOTAL LOAD = 39.0 PSF

SPACING = 24.0 IN./C/C

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBC 2015

THIS DESIGN COMPLIES WITH:

- PART 9 OF BCBC 2018, ABC 2019
- PART 9 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPC 2014

(55 % OF 31.3 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 25.6 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFLECT (LL) = L/360 (0.19")

CALCULATED VERT. DEFLECT (LL) = L/999 (0.007")

ALLOWABLE DEFLECT (TL) = L/360 (0.19")

CALCULATED VERT. DEFLECT (TL) = L/999 (0.017")

CSI: TC=0.23/1.00 (B-C:1), BC=0.08/1.00 (D-E:4), WB=0.00/1.00 (B-E:1), SS=0.12/1.00 (B-C:1)

DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10

COMP=1.10 SHEAR=1.10 TENS=1.10

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE RIGHT HEEL ONLY

TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT.

NAIL VALUES

PLATE GRIP (PS) SHEAR SECTION (PS) (PL) (PL)

MAX MIN MAX MIN

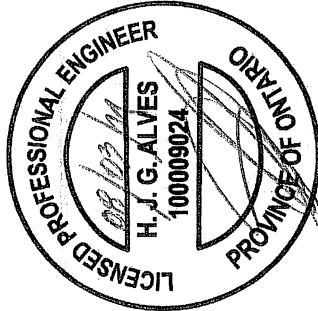
MT20 550 371 1747 788 1987 1873

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

SI GRIP = 0.19 (B) (INPUT = 0.90)

SI METAL = 0.06 (B) (INPUT = 1.00)



Structural component only
DWG# T-2126205

JOE NAME

419847

Tamarack Roof Truss, Burlington

TRUSS NAME

J30

QUANTITY

4

PLY

1

JOB DESC.

ROYAL PINE HOMES

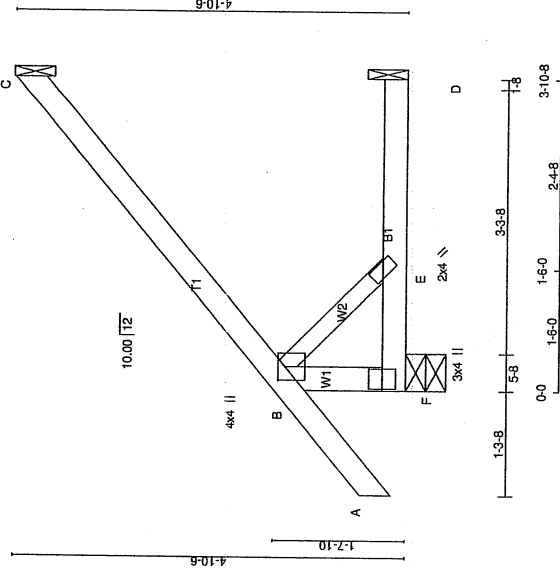
TRUSS DESC.

DRWG NO.

Version 8.420 S Jan 21 2021 Mitek Industries, Inc. Tue Aug 3 14:42:54 2021 Page 1

ID:pl42lfvgw5RgJH4JZyh4JpTyhK9w-aGwJTFsXTK6DPB63fBIL8rUuJhUZpRZn6fPyY?F

Scale = 1/27.3



LUMBER

N.L.G.A. RULES

CHORDS

F - B

2x4

DRY

LUMBER

No.2

4.0

4.0

1.00

2.00

F - C

2x4

DRY

LUMBER

No.2

4.0

4.0

1.00

2.00

F - D

2x4

DRY

LUMBER

No.2

4.0

4.0

1.00

2.00

ALL WEBS

2x3

DRY

LUMBER

No.2

4.0

4.0

1.00

2.00

DRY: SEASONED LUMBER

PLATES: (table is in inches)

PLATE TYPE	PLATE SIZE	W	LEN	Y	X
B	TMWV+P	4.0	4.0	1.00	2.00
E	BMW+P	2.0	4.0		
F	BMV+P	3.0	4.0		

UNFACTORED REACTIONS

1ST LOUSE	MAX. MIN.	COMPONENT REACTIONS	DEAD	SOIL			
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL
F	239	170/0	0/0	0/0	0/0	69/0	0/0
C	122	99/0	0/0	0/0	0/0	23/0	0/0
D	29	0/0	0/0	0/0	0/0	29/0	0/0

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) F

BRACING

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 10.00 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

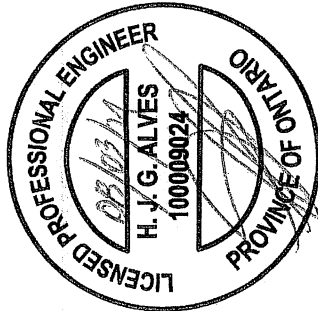
ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE LATERALLY RESTRAINED.

LOADING

TOTAL LOAD CASES: (5)

CHORDS	MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	MAX. LC1	MAX. CSI (LC)	MAX. UNBRACED LENGTH FR-TO	MEMB. B-E	MAX. FORCE (LBS)	FACTORED CSI (LC)
FR-TO	F-B	-305/0	0.0	0.0	0.03 (1)	7.81	0/0	0/0	0.00 (1)
A-B	0/41	-91.8	-91.8	0.14 (5)	10.00				
B-C	0/0	-91.8	-91.8	0.23 (1)	10.00				
F-E	0/0	-18.5	-18.5	0.08 (4)	10.00				
E-D	0/0	-18.5	-18.5	0.08 (4)	10.00				

CANTILEVER ANALYSIS HAS BEEN CONSIDERED IN THIS DESIGN



Structural component only
DWG# T-2126210

DESIGN CRITERIA

SPECIFIED LOADS:
TOP CH. LL = 25.6 PSF
DL = 6.0 PSF
BOT CH. LL = 0.0 PSF
DL = 7.4 PSF
TOTAL LOAD = 39.0 PSF

SPACING = 24.0 IN./C/C

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBC 2015

THIS DESIGN COMPLIES WITH:

- PART 9 OF BCBC 2018, ABC 2019
- PART 9 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPC 2014

(55 % OF 31.3 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 25.6 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFLECTION (LL) = L/360 (0.19")
CALCULATED VERT. DEFLECTION (LL) = L/999 (0.007")
ALLOWABLE DEFLECTION (TL) = L/360 (0.19")
CALCULATED VERT. DEFLECTION (TL) = L/999 (0.017")

CSI: TC=0.23/1.00 (B-C1), BC=0.08/1.00 (D-E4), WB=0.00/1.00 (B-E1), SSI=0.11/1.00 (B-C1), DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10 COMP=1.10 SHEAR=1.10 TENS=1.10

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE RIGHT HEEL ONLY

TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT.

NAIL VALUES
PLATE GRIP(DRY) SHEAR SECTION (PLJ)
MAX MIN MAX MIN
MT20 650 371 1747 788 1987 1873

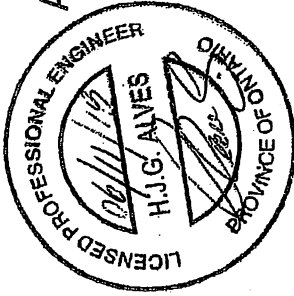
PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.22 (B) (INPUT = 0.90)

JSI METAL= 0.06 (B) (INPUT = 1.00)

TOTAL WEIGHT = 4 X 15 = 61 lb



Alves Engineering Services Inc.

5208 Easton road
Burlington, Ontario L7L 6N6
(289) 259 5455

RESPONSABILITIES

- 1- Alves Engineering Services Inc. is responsible for the design of trusses as individual components
- 2- It is the responsibility of others to ascertain that the design loads utilized on this drawing meet or exceed the actual dead load imposed by the structure and the live load imposed by the local building code or the authorities having jurisdictions.
- 3- All dimensions are to be verified by owner, contractor, architect or other authority before manufacture.
- 4- Alves Engineering Services Inc. bears no responsibility for the erection of the trusses. Persons erecting trusses are cautioned to seek professional advice regarding temporary and permanent bracing system. Bracing shown on Alves Engineering Services Inc. drawings is specified for the truss as a single component and forms an integral part of the truss design, but is not meant to represent the only required bracing for that truss when trusses are installed in a series of trusses forming a roof truss system.
- 5- It is the manufacturer's responsibility to ensure that the trusses are manufactured in conformance with Alves Engineering Services Inc. specifications outlined below.

SPECIFICATIONS

- 1- Truss components sealed by Alves Engineering Services Inc. conform to the relevant sections of the current Building Code of Ontario and Canada (part 4 or part 9) or the current Canadian code for Farm Buildings in accordance with the application specified on the sealed truss component drawing. All truss component design procedures must conform to the current design standard issued by the truss plate institute of Canada (TPIC). All lumber and nailing stresses to conform to the current CSA wood design standard identified on the current Building Code and TPIC.
- 2- Lumber is to be the sizes and grade specified on the truss drawing.
- 3- Moist content of lumber is not to exceed 19% in service unless otherwise specified.
- 4- Plates shall be applied to both faces of the each truss joint and shall be positioned as shown on the truss drawings
- 5- Lumber used on manufacture of trusses is not to be treated with chemicals unless otherwise specified on the truss drawings.
- 6- The top chord is assumed to be continuously laterally braced by the roof sheathing or purlins at intervals specified on the truss drawing but not exceeding 24" c/c for (part 9) and not exceeding 48" for (part 4 or farm design)
- 7- When rigid ceiling is not attached directly to the bottom chord, lateral bracing is required and it should not exceed more than 3m or 10' intervals.
- 8- Refer to Mitek sheet MII17473C REV.10-08 attached for information on symbols, numbering and General Safety notes.

T-1300213

Feb 09, 2018

TOE-NAIL CAPACITY DETAILS

LATERAL AND WITHDRAWAL RESISTANCE OF BEARING ANCHORAGE BY TOE-NAILS

	SPF		D. FIR		SPF		D. FIR	
	COMMON WIRE	COMMON SPIRAL	COMMON WIRE	COMMON SPIRAL	COMMON WIRE	COMMON SPIRAL	COMMON WIRE	COMMON SPIRAL
3.00	0.144	0.152	122	139	30	42	42	52
3.25	0.144	0.152	127	144	32	45	45	52
3.50	0.160	0.152	152	173	38	52	52	52
3.00	0.122	0.152	96	108	26	36	36	36
3.25	0.122	0.152	97	108	28	40	40	40
3.50	0.152	0.152	142	161	36	50	50	50
3.25" Gun nail	0.120	0.120	94	105	28	39	39	39

Note: If using truss with D. Fir lumber and SPF bearing plate, use tabulated SPF values in table.

Nail type:	Common wire	Common spiral	Common wire	Common spiral	Gun Nail
Diameter (in.)	0.160	0.152	0.144	0.122	0.120
Length (in.)	3.50	3.50	3.00	3.00	3.25
2x4 SPF	2	2	3	3	3
2x6 SPF	4	4	4	5	5
2x4 D. FIR	2	2	2	2	2
2x6 D. FIR	3	3	3	4	4

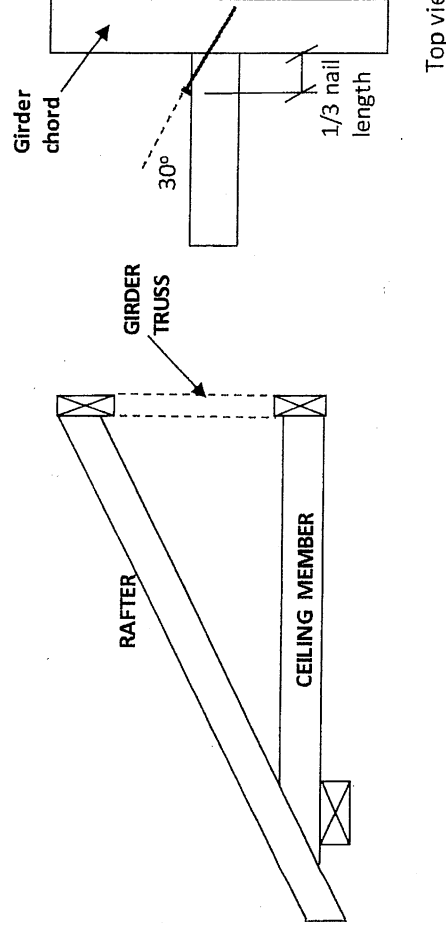
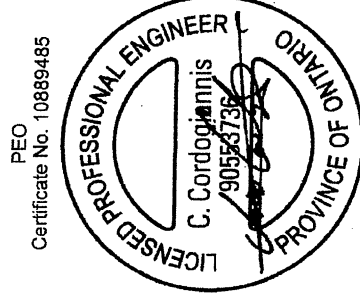


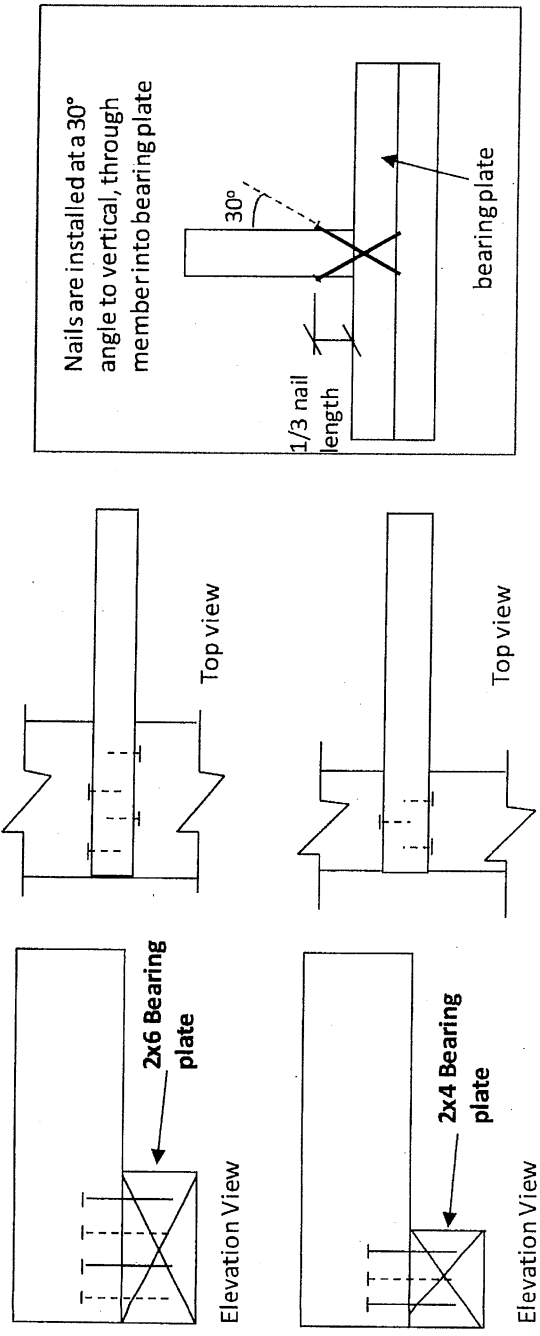
Figure 1: Toe-Nailing Rafter / Ceiling Member to Girder Truss



December 21, 2020

TOE-NAIL CAPACITY DETAILS

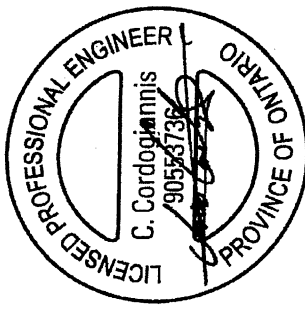
Figure 2: Toe-Nail Anchorage to Bearing Plate for Uplift



NOTES:

1. Rafter and ceiling members may be connected to top and bottom chords of girder truss by toe-nailing the members into the girder chords (see fig. 1), provided the factored vertical reactions of the supported members do not exceed the lateral resistance of the toe-nails. Mechanical connectors (hangers) are required if factored vertical reactions exceed the toe-nail capacity, or if the connection must resist horizontal loads (loads perpendicular to the face of girder or rafter).
2. Trusses, rafters or ceiling members may be anchored to the bearing plate with toe-nails (see fig. 2), provided that the factored uplift reactions due to **wind or earthquake loads** do not exceed the **withdrawal resistance of the toe-nails**. Mechanical anchors (tie-downs) are required for reactions that exceed the toe-nail withdrawal capacity. Toe-nail anchorage to bearing plates is **NOT** permitted if uplift reactions are generated from gravity loads (snow, floor live, dead).
3. Tabulated toe-nail resistances on page 1 are for **one** toe-nail. Multiply unit values by the number of nails used in the connection. Maximum number of nails in a connection shall not exceed the tabulated limits shown on page 1 for a given lumber size /species.
4. Nail values are based on specific gravity of $G = 0.42$ (SPF) and $G = 0.49$ (D. Fir).
5. Toe-nails shall be driven at approximately $1/3$ the nail length from the edge of the joist/truss chord and driven at an angle of 30° to the grain of the member.
6. For wind / earthquake loads, tabulated lateral resistances may be multiplied by 1.15 (K_0 factor). No increases are permitted for tabulated withdrawal resistances.
7. Lumber must be dry ($< 19\%$ moisture content) at the time of nail installation.
8. Nail values in this table comply with CSA O86-19, Clause 12.9.

PEO
Certificate No. 10889485



LUL/LUS/LJS/HUS/HHUS/HGUS

SIMPSON
Strong-Tie®

Standard and Double-Shear Joist Hangers



*This product is preferable to similar connectors because of
a) easier installation, b) higher capacities, c) lower installed
cost, or a combination of these features.*

Most hangers in this series have double-shear nailing — an innovation that distributes the load through two points on each joist nail for greater strength. This allows for fewer nails, faster installation, and the use of all common nails for the same connection. (Do not bend or remove tabs)

Double-shear hangers range from the light capacity LUS hangers to the highest capacity HGUS hangers. For medium load truss applications, the HUS offers a lower cost alternative and easier installation than the HHUS hangers, while providing greater load capacity and bearing than the LUS.

Material: See table on pp. 217–218.

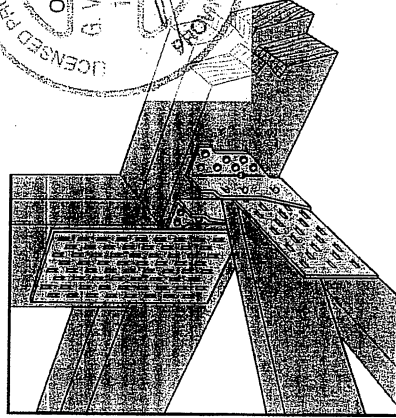
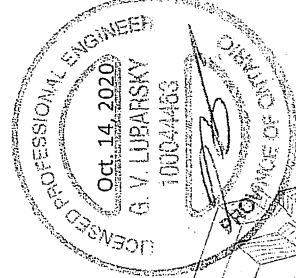
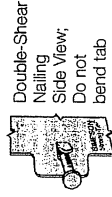
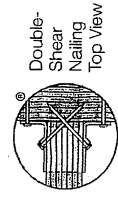
Finish: Galvanized. Some products available in stainless steel or ZMAX® coating; see Corrosion Information, pp. 18–20.

Installation:

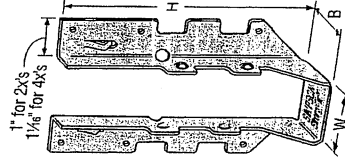
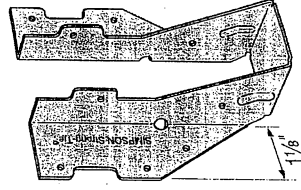
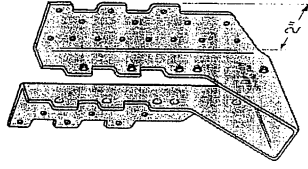
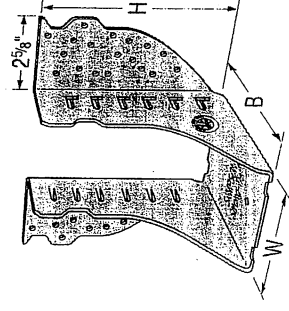
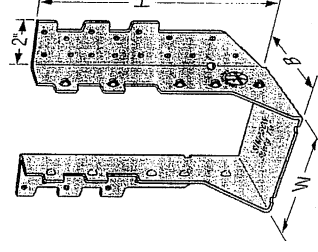
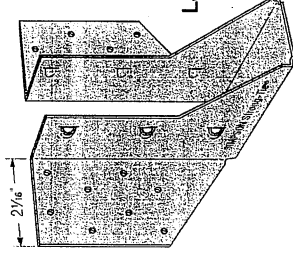
- Use all specified fasteners; see General Notes.
- Nails must be driven at an angle through the joist or truss into the header to achieve the tabulated resistances (except LUL).
- Where 16d commons are specified, 10d commons may be used at 0.83 of the tabulated factored resistance.
- Not designed for welded or nailer applications.
- With single ply 2x carrying members, use 10d x 1 1/2" nails into the header and 10d commons into the joist, and reduce the resistance to 0.64 of the table value where 16d nails are specified and 0.77 where 10d nails are specified.

Options:

- LUS, LJS, LUL and HUS hangers cannot be modified.
- Other sizes available; consult your Simpson Strong-Tie representative.
- See Hanger Options information on pp. 105–107.



**Typical HUS26
Installation
with Reduced
Heel Height**
*(Truss Designer
to provide
fastener quantity
for connecting
multiple members
together)*


LUS28

LU26L

HUS210
(HUS26, HUS28,
and HHUS similar)

HGUS28-2

HHUS210-2

LJS26DS

TECHNICAL BULLETIN

LUS - Double Shear Joist Hangers

SIMPSON
Strong-Tie

All LUS hangers have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation and the use of common nails for all connections.

Material: 18 gauge

Finish: G90 galvanized

Design:

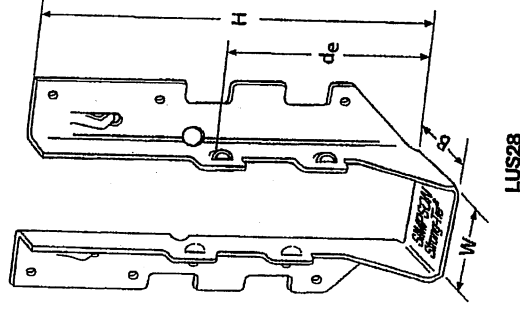
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these loads.

Installation:

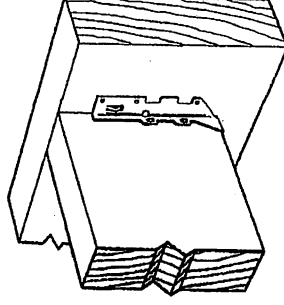
- Use all specified fasteners.
- Nails: 16d = 0.162" dia. x 3½" long common wire, 10d = 0.148" x 3" long common wire.
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.

Options:

- These hangers cannot be modified



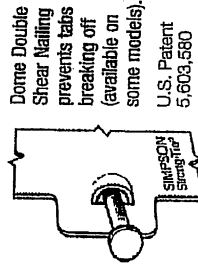
LUS28



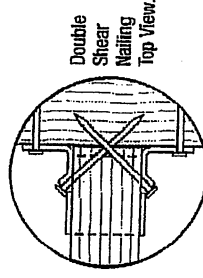
Typical LUS
Installation

Model No.	Ga.	Dimensions (in.)				Fasteners		Factored Resistance (lb.)		
		W	H	B	d ₁	Face	Joist	Uplift	Normal	S-P-F
LUS24	18	1⅞	3⅜	1¾	1⅞	(4) 10d	(2) 10d	(K _g =1.15)	(K _g =1.00)	(K _g =1.00)
LUS24-2	18	3⅜	3⅜	2	1⅞	(4) 16d	(2) 16d	710	1630	645
LUS26	18	1⅞	4⅜	1¾	3⅜	(4) 10d	(4) 10d	835	2020	590
LUS26-2	18	3⅜	4⅜	2	4	(4) 16d	(4) 16d	1420	2170	1290
LUS26-3	18	4⅜	4⅜	2	3¼	(4) 16d	(4) 16d	1720	2595	1545
LUS28	18	1⅞	6⅜	1¾	3⅜	(6) 10d	(6) 10d	1720	2595	1545
LUS28-2	18	3⅜	7	2	4	(6) 16d	(4) 16d	1420	2520	1290
LUS28-3	18	4⅜	6⅜	2	3¼	(6) 16d	(4) 16d	1720	3325	1545
LUS210	18	1⅞	7⅜	1¾	3⅜	(8) 10d	(4) 10d	1720	3325	1545
LUS210-2	18	3⅜	9	2	6	(8) 16d	(6) 16d	1420	2785	1290
LUS210-3	18	4⅜	8⅜	2	5¼	(8) 16d	(6) 16d	2580	4500	2320
								2580	3345	2320
										2375

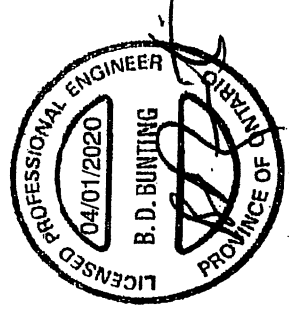
1. d₂ is the distance from the seat of the hanger to the highest joist nail.



Dome Double
Shear Nailing
prevents tabs
breaking off
(available on
some models).
U.S. Patent
5,603,580



Double
Shear
Nailing
Top View.



LIMIT
STATES
DESIGN

This technical bulletin is effective until June 30, 2022, and reflects information available as of April 1, 2020. This information is updated periodically and should not be relied upon after June 30, 2022. Contact Simpson Strong-Tie for current information and limited warranty or see strongtie.com.

© 2020 Simpson Strong-Tie Company Inc.

T-SPEC LUS20 3/20 exp. 6/22

(800) 999-5099
strongtie.com

TECHNICAL BULLETIN

HUS/LJS – Double Shear Joist Hangers



All hangers have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation and the use of common nails for all connections. Do not bend or remove tabs.

Material: See table

Finish: G90 galvanized

Design:

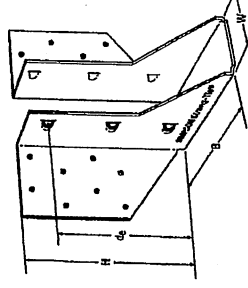
- Factored resistances are in accordance with CSA O86 -14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these loads.

Installation:

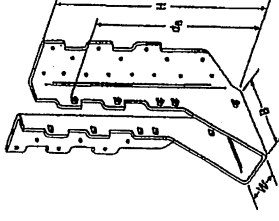
- Use all specified fasteners
- Nails: 16d = 0.162" dia. x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

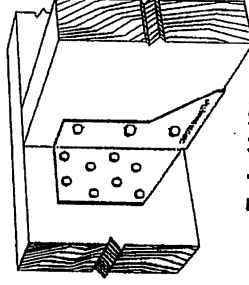
- See current catalogue for options



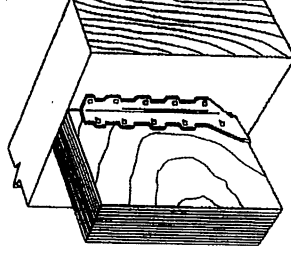
LJS26DS



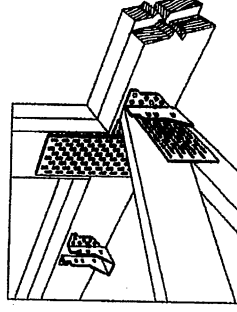
HUS210
(HUS26, HUS28, similar)



Typical LJS26DS
Installation



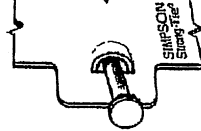
Typical HUS
Installation



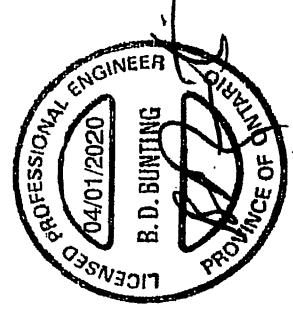
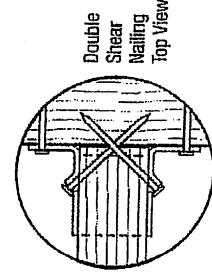
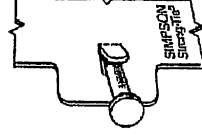
Typical HUS Installation
(Truss Designer to provide fastener
quantity for connecting multiple
members together)

Model No.	Ga.	Dimensions (in.)				Fasteners		Factored Resistance (lb.)			
		W	H	B	d _o ¹	Face	Joist	D.F.F-L Uplift (K _o =1.15) lb.	Normal (K _o =1.00) lb.	Uplift (K _o =1.15) lb.	Normal (K _o =1.00) lb.
LJS26DS	18	1½	5	3½	4½	(16) 16d	(6) 16d	2055	4265	1460	4115
HUS26	16	1	5½	3	3½	(14) 16d	(6) 16d	2705	4940	2065	3875
HUS28	16	1	7½	3	6½	(22) 16d	(8) 16d	3605	5365	2675	4345
HUS210	16	1	9½	3	7½	(30) 16d	(10) 16d	4505	5795	4010	4740
HUS1.81/10	16	1½	9	3	8	(30) 16d	(10) 16d	4505	6450	4010	5200

1. d_o is the distance from the seat of the hanger to the highest joist nail.



Double Shear Nailing prevents tabs breaking off (available on some models).
U.S. Patent 5,803,580



LIMIT
STATES
DESIGN

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TECHNICAL BULLETIN

HGUS – Double Shear Joist Hangers



All HGUS hangers have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation and the use of common nails for all connections. Do not bend or remove tabs.

Material: 12 gauge

Finish: G90 galvanized

Design:

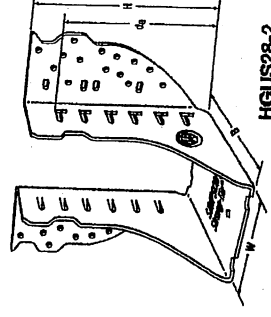
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these loads.

Installation:

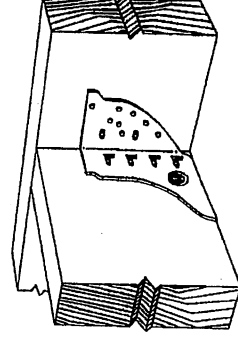
- Use all specified fasteners
- Nails: 16d = 0.162" dia x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

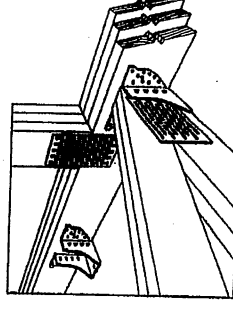
- See current catalogue for options



HGUS28-2



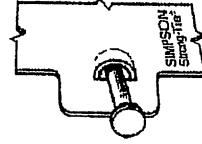
Typical HGUS Installation



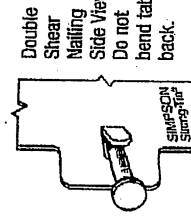
Typical HGUS Installation
(Truss Designer to provide fastener quantity for connecting multiple members together)

Model No.	Ga.	Dimensions (in.)					Fasteners		Factored Resistance (lb.)			
		W	H	B	d _g ¹	Face	Joist	D.Fir-L		S-P-F		
								Uplift	Normal	Uplift	Normal	
								(K _u =1.15)	(K _u =1.00)	(K _u =1.15)	(K _u =1.00)	
HGUS26	12	1 5/16	5 3/8	5	4 5/8	(20) 16d	(8) 16d	2685	6625	2685	5700	
HGUS26-2	12	3 3/16	5 7/16	4	4 1/8	(20) 16d	(8) 16d	4385	8950	3100	6355	
HGUS26-3	12	4 15/16	5 1/2	4	4 1/8	(20) 16d	(8) 16d	4385	8950	3100	6355	
HGUS26-4	12	6 3/16	5 7/16	4	4 1/8	(20) 16d	(8) 16d	4385	8950	3100	6355	
HGUS28	12	1 5/8	7 1/8	5	6 1/8	(36) 16d	(12) 16d	3310	7675	3100	6900	
HGUS28-2	12	3 3/16	7 3/16	4	6 1/8	(36) 16d	(12) 16d	6070	12980	4310	9215	
HGUS28-3	12	4 15/16	7 1/8	4	6 1/8	(36) 16d	(12) 16d	6070	12980	4310	9215	
HGUS28-4	12	6 3/16	7 3/16	4	6 1/8	(36) 16d	(12) 16d	6070	12980	4310	9215	
HGUS210	12	1 5/8	9 1/8	5	7 7/8	(46) 16d	(16) 16d	3535	11070	2510	8090	
HGUS210-2	12	3 3/16	9 3/16	4	8 1/8	(46) 16d	(16) 16d	6840	14015	4855	10270	
HGUS210-3	12	4 15/16	9 1/8	4	8 3/8	(46) 16d	(16) 16d	6840	14645	4855	10400	
HGUS210-4	12	6 3/16	9 3/16	4	8 1/8	(46) 16d	(16) 16d	6840	14645	4855	10400	
HGUS212-4	12	6 3/16	10 5/8	4	10 1/8	(56) 16d	(20) 16d	7640	14995	5425	10645	
HGUS214-4	12	6 3/16	12 5/8	4	11 1/8	(66) 16d	(22) 16d	10130	16400	7195	11645	

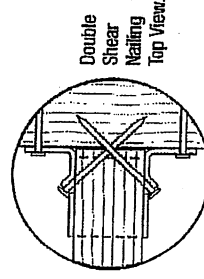
1. d_o is the distance from the seat of the hanger to the highest joist nail.



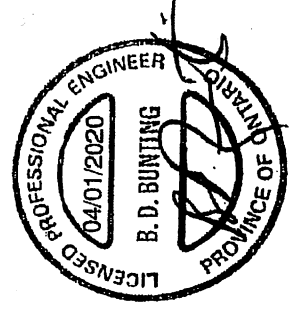
Dome Double Shear Nailing prevents tabs breaking off (available on some models).
U.S. Patent 5,603,580



Double Shear Nailing Side View. Do not bend tab back.



Double Shear Nailing Top View.



LIMIT STATES DESIGN

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TECHNICAL BULLETIN

HHUS – Double Shear Joist Hangers

SIMPSON
Strong-Tie

All HHUS hangers have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation and the use of common nails for all connections. Do not bend or remove tabs.

Material: 14 gauge

Finish: G90 galvanized

Design:

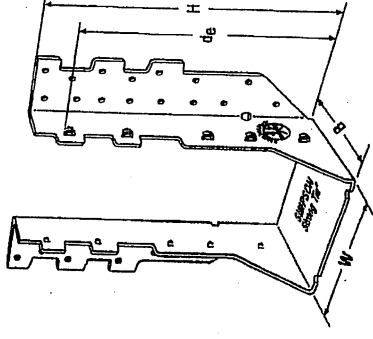
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these loads.

Installation:

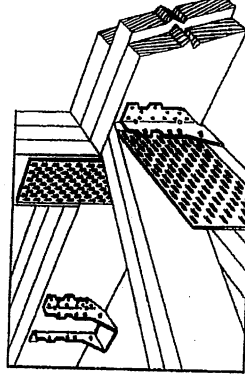
- Use all specified fasteners
- Nails: 16d = 0.162" dia. x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

- See current catalogue for options



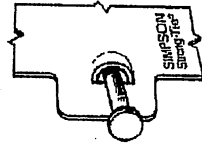
HHUS410



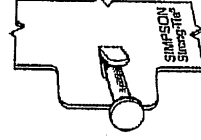
Typical HHUS Installation
(Truss Designer to provide fastener quantity for connecting multiple members together)

Model No.	Ga.	Dimensions (in.)					Fasteners		Factored Resistance (lb.)			
		W	H	B	dg	1	Face	Joist	D.F.F.-L		S-P-F	
									Uplift	Normal	Uplift	Normal
HHUS26-2	14	3 5/8	5 1/4	3	3 15/16	(14) 16d	(6) 16d	(8) 16d	2850	7335	2065	5205
HHUS28-2	14	3 5/8	7 1/4	3	6 5/8	(22) 16d	(8) 16d	(8) 16d	3765	8940	2675	6345
HHUS210-2	14	3 5/8	9 3/4	3	8	(30) 16d	(10) 16d	(10) 16d	4670	9680	4235	7000
HHUS210-3	14	4 1/4	9	3	7 15/16	(30) 16d	(10) 16d	(10) 16d	4670	9670	4235	6865
HHUS210-4	14	6	8 7/8	3	7 7/8	(30) 16d	(10) 16d	(10) 16d	4670	10155	4235	7210
HHUS46	14	3 5/8	5 13/16	3	3 15/16	(14) 16d	(6) 16d	(6) 16d	2540	7335	2065	5205
HHUS48	14	3 5/8	7 1/4	3	6 1/4	(22) 16d	(8) 16d	(8) 16d	3765	8940	2675	6345
HHUS410	14	3 5/8	9	3	8	(30) 16d	(10) 16d	(10) 16d	4670	9855	4235	7000
HHUS5.50/10	14	5 1/2	9	3	8	(30) 16d	(10) 16d	(10) 16d	4670	10155	4235	7210
HHUS7.25/10	14	7 1/4	9	3 5/8	7 23/32	(30) 16d	(10) 16d	(10) 16d	4670	10155	3370	7210

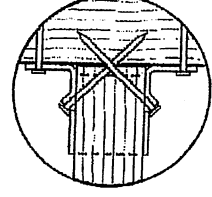
1. dg is the distance from the seat of the hanger to the highest joist nail.



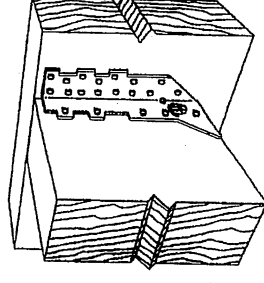
Dome Double Shear Nailing prevents tabs breaking off (available on some models).
U.S. Patent 5,603,580



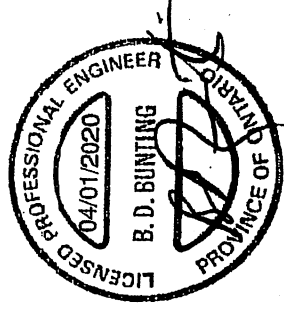
Double Shear Nailing Side View. Do not bend tab back.



Double Shear Nailing Top View.



Typical HHUS Installation



LIMIT
STATES
DESIGN

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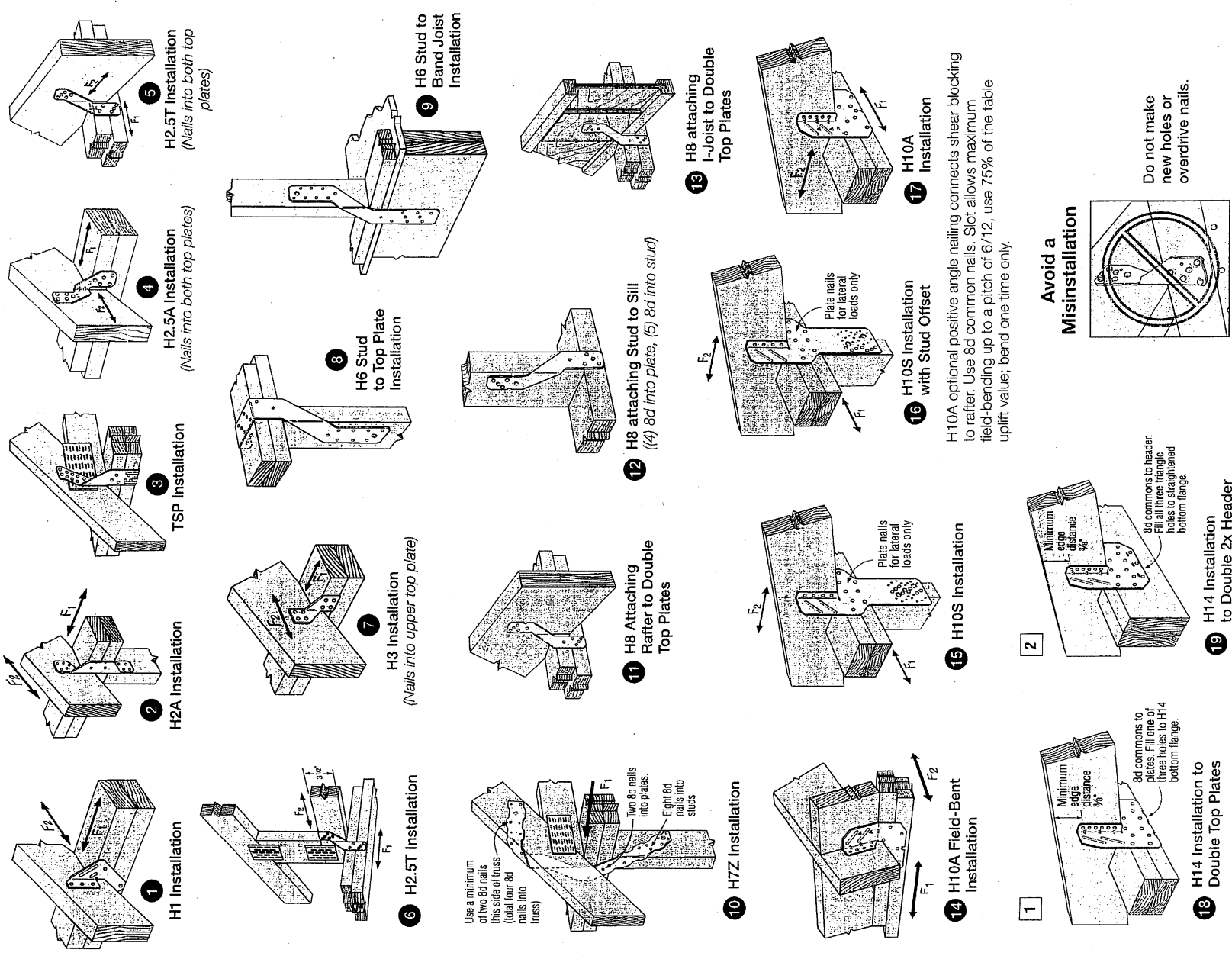
T-SPECHHUS20 3/20 exp. 6/22

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H/TSP

SIMPSON
Strong-Tie

Seismic and Hurricane Ties (cont.)



H - Seismic and Hurricane Ties

Material: 18 gauge **Finish:** G90 galvanized

Material: 18 gauge **Finish:** G90 galvanized

- Factored resistances have been increased 15%. No further increase is permitted.

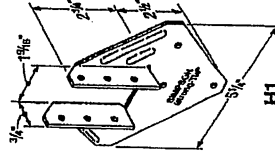
- Nails: $8d = 0.131''$ dia. $\times 2\frac{1}{2}''$ long common wire, $8d \times 1\frac{1}{2}'' = 0.131'' \times 1\frac{1}{2}$ long, $10d \times 1\frac{1}{2}'' = 0.146'' \times 1\frac{1}{2}''$ long

- Hurricane ties do not replace solid blocking

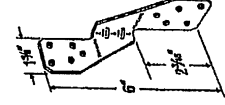
Factored resistances for more than one direction for a single connection cannot be added together. A factored load which can be divided into components in the directions given must be evaluated as follows: Factored Shear/Resisting Shear + Factored Tension/Resisting Tension ≤ 1.0 .

SIMPSON
Strong-Tie

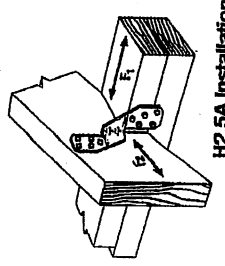
Install diagonally across from each other for minimum 2x truss.



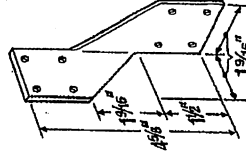
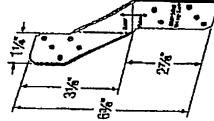
A diagram illustrating the application of a wedge. A hammer is shown striking a wedge that is being driven into a block. A force vector F_1 is shown acting on the hammer head, and a reaction force vector F_2 is shown acting on the wedge.



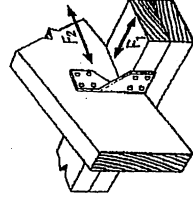
H2A Installation



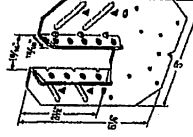
H2.5A Installation



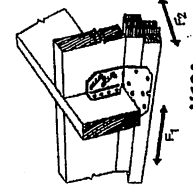
H2.5T Installation
(Nails into both top plates)



H3 Installation



H10A



Installation

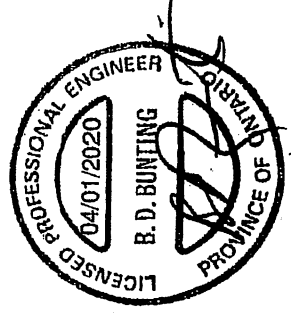
Model No.	Ga.	Fasteners			Factored Resistance (lb.)						
					D.Fir-L			S-P-F			
		To Rafter	To Plates	To Studs	Uplift		Normal		Uplift	Normal	
					F ₁	F ₂	F ₁	F ₂		F ₁	F ₂
					(K _g =1.15)						
H1	18	(6) 8d x 1½"	(4) 8d	—	740	685	300	660	485	215	
H2A	18	(5) 8d x 1½"	(2) 8d x 1½"	(5) 8d x 1½"	830	220	75	590	155	55	
H2.5A	18	(5) 8d	(5) 8d	—	805	160	160	755	160	160	
H2.5T	18	(5) 8d	(5) 8d	—	835	175	240	740	160	210	
H3	18	(4) 8d	(4) 8d	—	740	180	265	615	125	190	
H10A	18	(9) 10d x 1½"	(9) 10d x 1½"	—	1735	795	410	1505	565	290	

1. Factored resistances have been increased 15% for earthquake or wind loading with no further increase allowed

2. Factored resistances are for one anchor. A minimum raft thickness of 2½" must be used when framing anchors are installed on each side of the joist and on the same side of the plate.

	25	50	100	150	200	250
3. When cross-grain bending or cross-grain tension cannot be avoided, mechanical reinforcement to resist such forces should be considered.						

4. Hurricane ties are shown installed on the outside of the wall for clarity. Installation on the inside of the wall is acceptable. For a Continuous Load Path, connections must be on same side of the wall.

LIMIT
STATES
DESIGN

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TECHNICAL BULLETIN

TC – Truss Connectors

SIMPSON
Strong-Tie

The TC truss connector is an ideal connector for scissor trusses and can allow horizontal movement up to 1¼". The TC also attaches plated trusses to top plates or sill plates to resist uplift forces. Typically used on one or both ends of truss as determined by the building designer.

Material: 16 gauge

Finish: G90 galvanized

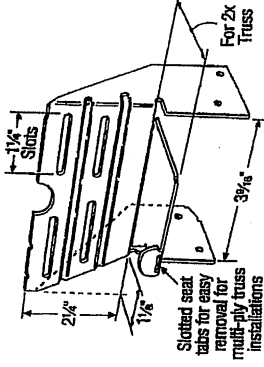
Design: Factored resistances are in accordance with CSA 086-14

Installation:

- Use all specified fasteners.
- Nails: 10d = 0.148" dia. x 3" long common wire, 10d x 1½" = 0.148" dia. x 1½" long.
- Drive 10d nails into the truss at the inside end of the slotted holes (inside end is towards the centre of the truss) and clinch on the back side. Do not seat these nails into the truss—allow room under the nail head for movement of the truss with respect to the wall.

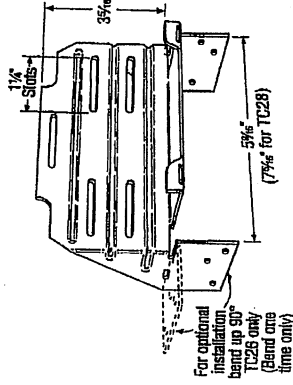
Optional TC Installation:

- Bend one flange up 90°. Drive specified nails into the top and face of the top plates or install Titen® screws into the top and face of masonry wall. See optional load tables and installation details.

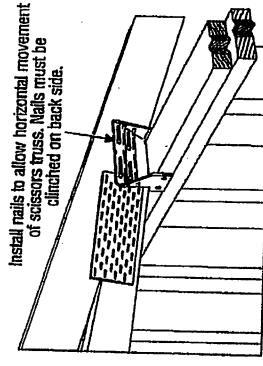


TC24

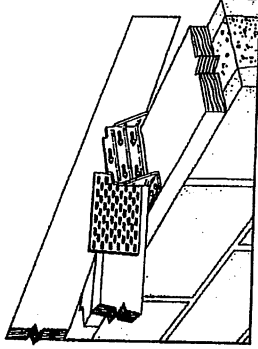
U.S. Patent 4,932,173



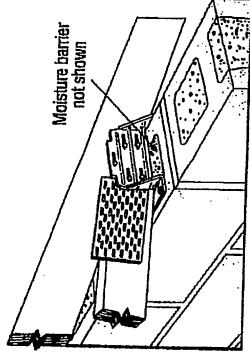
TC26
(TC28 Similar)



Typical TC24 Installation



Optional TC26 Installation for Grouted Concrete Block using a Wood Nailer (8", 10", 12" Wall Installation Similar)



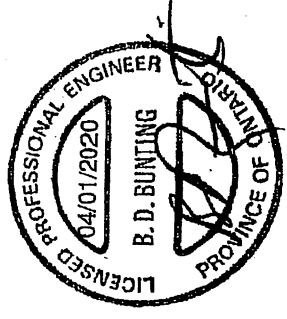
Optional TC26 Installation for Grouted Concrete Block using Titen Screws

1. Factored resistances have been increased 15% for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
2. Grout strength is 15 MPa minimum.
3. Optional TC28 installation with 10d nails requires minimum 3" top plate thickness.
4. TC26 fastened to grouted concrete block with (6) – 7/8" x 2¼" Titen screws has a factored uplift resistance of 275 lb.

Model No.	Fasteners		Factored Resistance	
	Truss	Wall Plates	D.Fir-L Uplift (K _u =1.15)	S-P-F Uplift (K _u =1.15)
TC24	(4) 10d	(4) 10d	605	430
TC26	(5) 10d	(6) 10d	1015	720
TC28	(5) 10d	(6) 10d	1015	720

Optional TC Installation Table

Model No.	Fasteners		Factored Resistance	
	Truss	Wall Plates	D.Fir-L Uplift (K _u =1.15)	S-P-F Uplift (K _u =1.15)
TC26	(5) 10d	(6) 10d x 1¼"	810	660
	(5) 10d	(6) 10d	930	660



LIMIT
STATES
DESIGN

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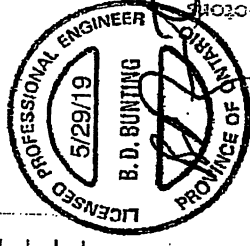
HTU**SIMPSON****Strong-Tie****Face-Mount Truss Hanger (cont.)**

These products are approved for installation with the Strong-Drive® SD Connector screw. See pp. 32-34 for more information.

Alternate Installation for (2) 2x4 and (2) 2x6 Headers

Model No.	Min. Nail Height (in.)	Minimum Header Size	Fasteners		Factored Resistance			
			Header	Joist	D.Fir-L		S-P-F	
					Uplift ($K_D = 1.15$)	Normal ($K_D = 1.00$)	Uplift ($K_D = 1.15$)	Normal ($K_D = 1.00$)
					lb.	lb.	lb.	lb.
					kN	kN	kN	kN
HTU26 (Min.)	3%	(2) 2x4	(10) 16d	(14) 10d x 1½"	1740	3340	1235	2370
					774	1485	549	1054
HTU26 (Max.)	6½"	(2) 2x4	(10) 16d	(20) 10d x 1½"	2470	4015	1755	2850
					1099	1786	781	1268
HTU28 (Max.)	3%	(2) 2x6	(20) 16d	(26) 10d x 1½"	4150	6395	2945	4540
					1846	2845	1310	2019
HTU210 (Max.)	7¼"	(2) 2x6	(20) 16d	(32) 10d x 1½"	4150	6395	2945	4540
					1846	2845	1310	2019

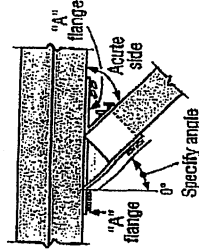
See table footnotes on p. 280.

**Hanger Options**

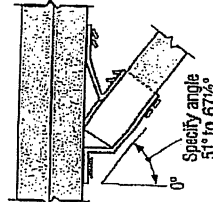
See Hanger Options Information on pp. 125-127.

Skewed Seat

- Skewable up to 67½°
- Available in single and 2-ply size
- No bevel cut required



Top View HTU Hanger Skewed Right < 51°



Top View HTU Hanger Skewed Right ≥ 51°

Factored Resistances for Skewed HTU Hangers

Model No.	Skew Angle (degrees)	Header	Joist	Fasteners				Factored Resistance			
				Uplift ($K_D = 1.15$)	Normal ($K_D = 1.00$)	Uplift ($K_D = 1.15$)	Normal ($K_D = 1.00$)	Uplift ($K_D = 1.15$)	Normal ($K_D = 1.00$)	Uplift ($K_D = 1.15$)	Normal ($K_D = 1.00$)
				lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
HTU26	< 51	(20) 16d	(14) 10d x 1½"	1835	4110	1300	2905	816	1828	578	1292
	51-67½	(20) 16d	(12) 10d x 1½"	1350	3620	955	2560	601	1810	425	1139
	< 51	(26) 16d	(20) 10d x 1½"	2810	4270	1985	3030	1250	1899	883	1348
HTU28	51-67½	(26) 16d	(17) 10d x 1½"	2075	3930	1465	2780	923	1748	652	1237
	< 51	(32) 16d	(26) 10d x 1½"	3785	4430	2675	3135	1684	1971	1190	1395
	51-67½	(32) 16d	(22) 10d x 1½"	2795	4240	1980	3000	1243	1886	881	1335
HTU210	< 51	(20) 16d	(14) 10d	2140	3715	1515	2625	952	1653	674	1168
	51-67½	(20) 16d	(12) 10d	1610	3920	1140	2785	716	1744	507	1239
	< 51	(26) 16d	(20) 10d	3960	5425	2815	3855	1762	2413	1252	1715
HTU26-2	51-67½	(26) 16d	(17) 10d	2385	5425	1695	3855	1061	2413	754	1715
	< 51	(32) 16d	(26) 10d	5025	6890	3570	4890	2235	3065	1588	2175
	51-67½	(36) 16d	(22) 10d	3145	6680	2225	4745	1399	2972	990	2110

1. Factored uplift resistances have been increased 15% for wind or earthquake loading; no further increase is allowed.
2. Reduced heel heights are not permitted for skewed HTU's.
3. Nails: 16d = 0.162" dia. x 3½" long, 10d x 1½" = 0.148" dia. x 1½" long, 10d = 0.148" dia. x 3" long. See pp. 27-28 for other nail sizes and information.

TECH-NOTES

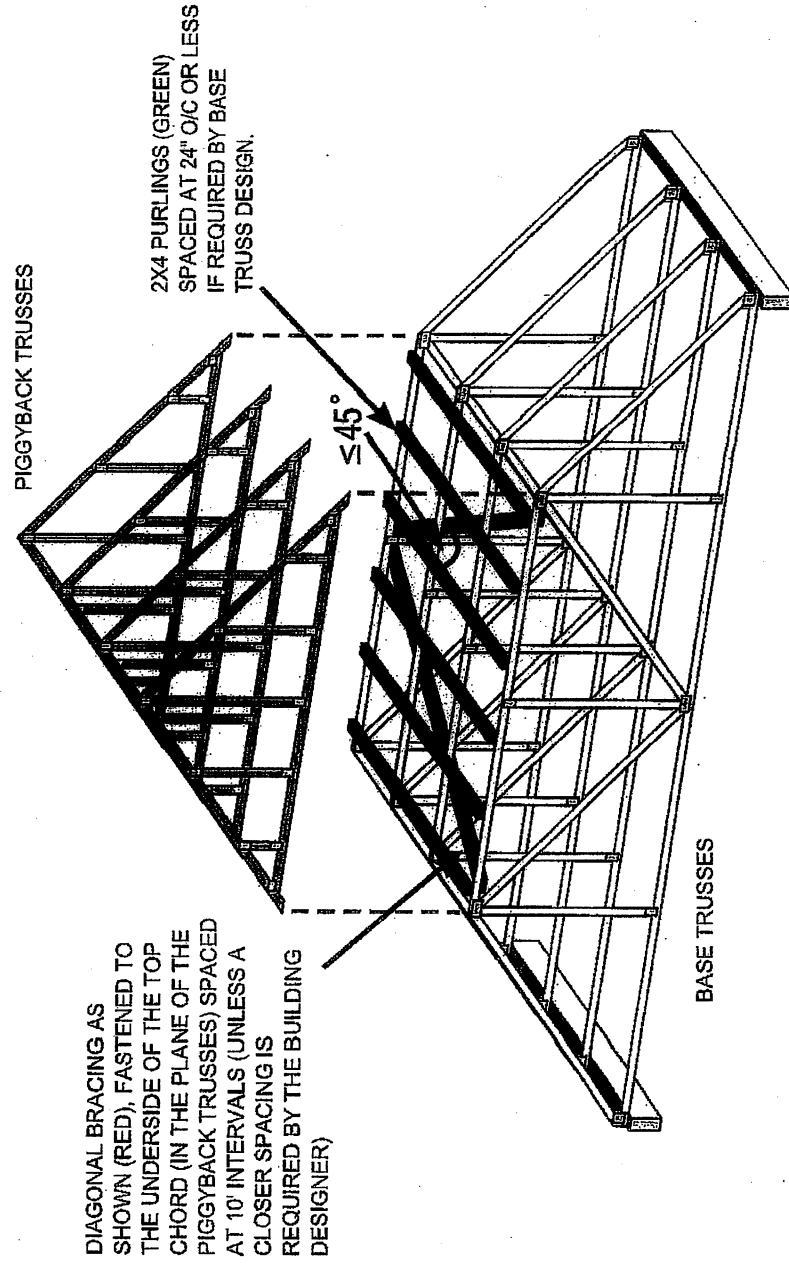
TN 15-001 Piggyback Bracing

Overview:

Where piggybacks are connected overtop of base trusses, 2x4 purlins must be first added to the flat portion of the base truss at a spacing no more than 24" o/c. These purlins not only provide support for the piggyback trusses above, but are required to laterally support the top chord of the base truss which will not have the sheathing directly connected to the flat portion of the base truss. This ensures the top chord, most often in compression, will not buckle laterally.

Further, the purlins in the plane of the flat portion require diagonal bracing to prevent lateral displacement of the purlins themselves where under certain conditions, the trusses may in fact all buckle in the same direction if this additional bracing is not added in the plane of the purlins.

Detail:



NOTE: THE SLOPED PORTION OF THE TOP CHORD OF THE BASE TRUSS AND PIGGYBACK TRUSS IN THIS SKETCH IS ASSUMED TO BE SHEATHED IN ACCORDANCE WITH THE OBC.

SKETCH FROM BCSI-CANADA 2013

Disclaimer:

OWTFA Tech Notes are intended to provide guidance to the design community both within the membership as well as to third party designers who might benefit from the information. The details have been developed by the OWTFA technical committee and although there may be professional engineers involved in development, the information contained in the tech-note are not intended to be used without having a professional engineer review the information for a specific application. The OWTFA takes no responsibility with respect to the information provided but has developed this tech-note to offer guidance where it is not currently readily available.

HRS/HST/ST/PS/LSTA/LSTI/MST/MSTC/MSTC/MSTC/MSTC

SIMPSON
Strong-Tie®

Strap Ties

Straps are designed to transfer tension loads in a wide variety of applications.

HRS — Heavy strap designed for installation on the edge of 2x members. The HRS416Z installs with Strong-Drive® SDS Heavy-Duty Connector screws.

LSTA and MSTA — Designed for use on the edge of 2x members, with a nailing pattern that reduces the potential for splitting.

LSTI and MSTI — Light and medium straps that are suitable where pneumatic-nailing is necessary through diaphragm decking and wood chord open-web trusses.

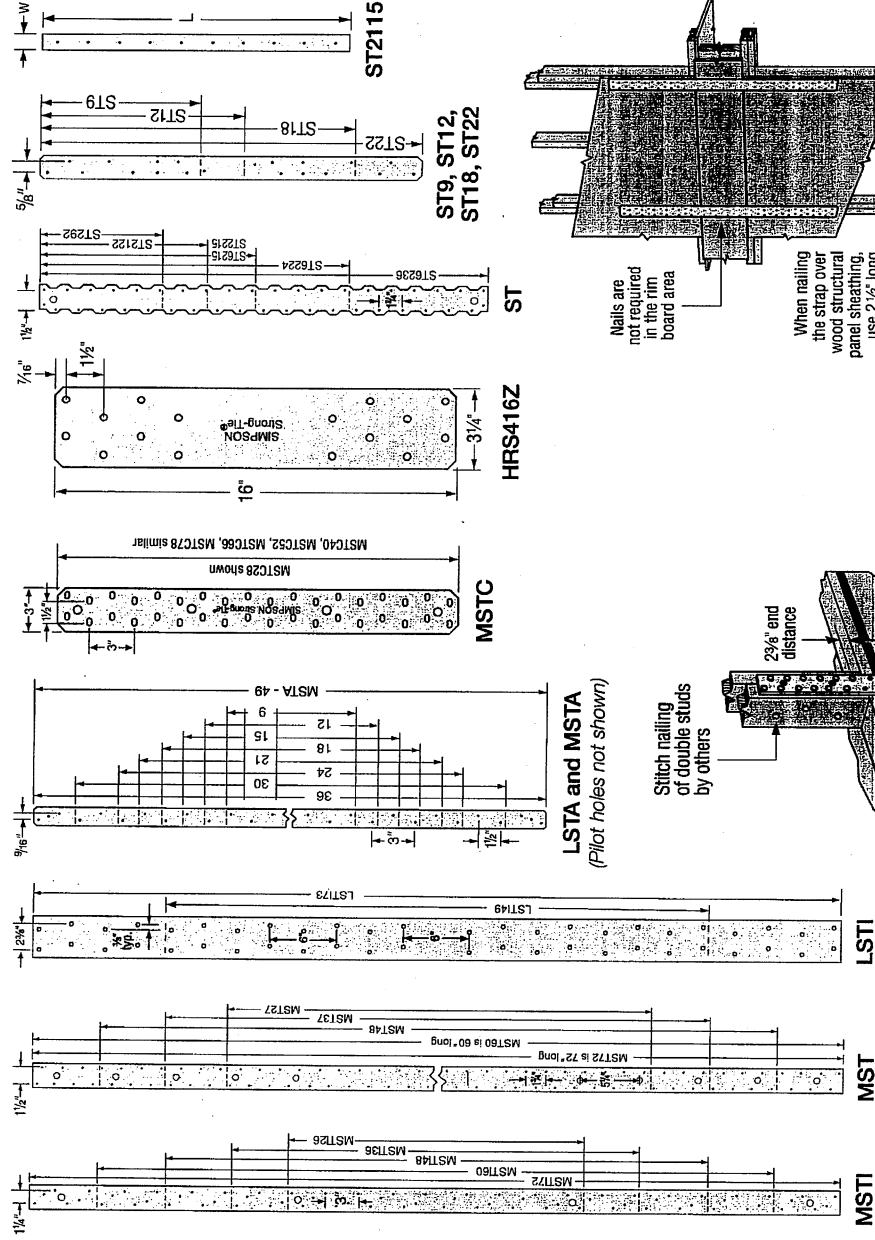
MST — High-capacity strap that can be installed with either nails or bolts. Suitable for double 2x member connections or greater.

MSTC — High-capacity strap that utilizes a staggered nail pattern to help minimize wood splitting. Nail slots have been countersunk to provide a lower nail head profile.

Finish: Galvanized. Some products are available in stainless steel, ZMAX® coating or black powder coat (add PC to sku); contact Simpson Strong-Tie. See Corrosion Information, pp. 18-20.

Installation: Use all specified fasteners; see General Notes

Options: Special sizes can be made to order; contact Simpson Strong-Tie for longer lengths



HRS/HST/ST/PS/LSTA/LSTI/MST/MSTA/MSTC/MSTI

Strap Ties (cont.)

These products are available with additional corrosion protection. For more information, see p. 20.

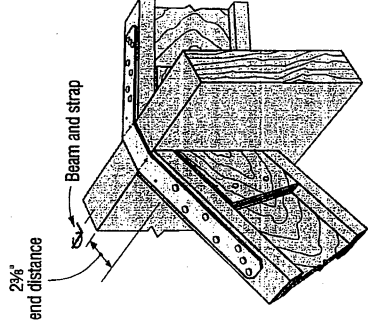
SD

Many of these products are approved for installation with Strong-Drive® SD Connector screws. See pp. 366–370 for more information.

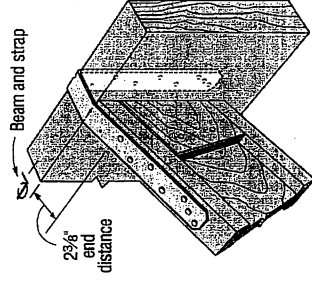
Model No.	Ga.	Dimensions (in.)		Fasteners (Total)	Factored Tensile Resistance						
					D.Fir-L			S-P-F			
		W	L		(K _D = 1.00)	(K _D = 1.15)	(K _D = 1.00)	(K _D = 1.15)	lb.	lb.	lb.
LSTA9	20	1 1/4	9	(6) 10d	600	690	555	635	635	635	635
LSTA12		1 1/4	12	(8) 10d	800	920	735	845	845	845	
LSTA15		1 1/4	15	(10) 10d	1000	1150	920	1060	1060	1060	
LSTA18		1 1/4	18	(12) 10d	1200	1380	1105	1270	1270	1270	
LSTA21		1 1/4	21	(14) 10d	1400	1610	1290	1485	1485	1485	
LSTA24	18	1 1/4	24	(16) 10d	1600	1840	1475	1695	1695	1695	
ST292		2 1/8	9 5/8	(8) 8d	585	675	535	615	615	615	
ST2122		2 1/8	12 3/8	(12) 8d	260	300	238	274	274	274	
ST2115		3/4	15 5/8	(8) 8d	940	1085	865	995	995	995	
ST2215		2 1/8	16 5/8	(16) 8d	418	483	385	443	443	443	
LSTA30	16	1 1/4	30	(20) 10d	670	770	615	710	710	710	
LSTA36		1 1/4	36	(24) 10d	298	343	278	318	318	318	
LST49		3/4	49	(32) 10d x 1 1/2"	895	1030	830	955	955	955	
LST173		3/4	73	(48) 10d x 1 1/2"	398	458	369	425	425	425	
MSTA9		1 1/4	9	(6) 10d	1120	1285	1040	1195	1195	1195	
MSTA12	16	1 1/4	12	(8) 10d	498	572	463	532	532	532	
MSTA15		1 1/4	15	(10) 10d	1340	1545	1245	1430	1430	1430	
MSTA18		1 1/4	18	(12) 10d	596	687	554	636	636	636	
MSTA21		1 1/4	21	(14) 10d	1565	1800	1455	1670	1670	1670	
MSTA24		1 1/4	24	(16) 10d	696	801	647	743	743	743	
MSTA30	16	1 1/4	30	(20) 10d	1790	2060	1660	1910	1910	1910	
MSTA36		1 1/4	36	(24) 10d	796	916	738	850	850	850	
MSTA49		1 1/4	49	(28) 8d	2470	2840	2260	2595	2595	2595	
ST6215		2 1/8	16 5/8	(16) 8d	1099	1263	1005	1154	1154	1154	
ST6224		2 1/8	23 3/8	(24) 8d	2965	3070	2710	3070	3070	3070	
ST9	16	1 1/4	9	(6) 8d	1319	1366	1206	1366	1366	1366	
ST12		1 1/4	11 5/8	(8) 8d	2725	2725	2545	2725	2725	2725	
ST18		1 1/4	17 3/4	(12) 8d	1212	1212	1132	1212	1212	1212	
ST22		1 1/4	21 5/8	(18) 8d	1405	1615	1300	1500	1500	1500	
		2 1/8	23 3/8	(24) 8d	625	718	578	667	667	667	
	16	1 1/4	9	(6) 8d	2305	2650	2155	2475	2475	2475	
		1 1/4	11 5/8	(8) 8d	1025	1179	959	1101	1101	1101	
		1 1/4	17 3/4	(12) 8d	525	605	490	560	560	560	
		2 1/8	23 3/8	(24) 8d	234	269	218	249	249	249	
		1 1/4	21 5/8	(18) 8d	700	805	650	750	750	750	

1. Factored resistances have been increased 15% for earthquake or wind loading with no further increase allowed.
2. Use half of the nails in each member being connected to achieve the listed resistances.
3. Nails: 10d = 0.148" dia. x 3" long, 10d x 1 1/2" = 0.148" dia. x 1 1/2" long, 8d = 0.131" dia. x 2 1/2" long. See pp. 22–23 for other nail sizes and information.

Straps and Ties



Typical LSTA Installation
(hanger not shown)
Bend strap one time only



Typical LSTA Installation
(hanger not shown)
Bend strap one time only

HRS/HST/ST/PS/LSTA/LSTI/MST/MSTA/MSTC/MSTI
Strap Ties (cont.)

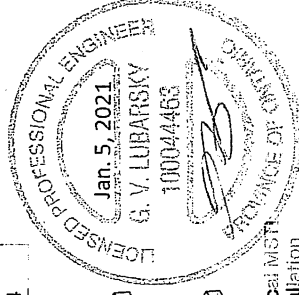
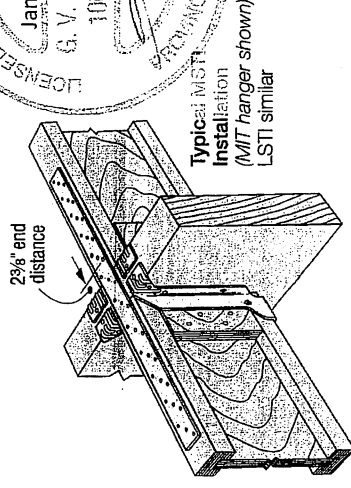
These products are available with additional corrosion protection. For more information, see p. 20.

SD

Many of these products are approved for installation with Strong-Drive® SD Connector screws. See pp. 366–370 for more information.

Model No.	Ga.	Dimensions (in.)		Fasteners (Total)	Factored Tensile Resistance							
					D.Fir-L			S-P-F				
					(K _D = 1.00)	(K _D = 1.15)	(K _D = 1.00)	(K _D = 1.15)	(K _D = 1.00)	(K _D = 1.15)		
					lb.	kN	lb.	kN	lb.	kN		
MSTC28	16	3	28 1/4	(32) 10d	3955	4545	3615	4155	1759	20.22	16.08	18.48
MSTC40					5930	6820	5420	6235	26.38	30.34	24.11	27.74
MSTC52					6670	6940	6100	6940	29.67	30.87	27.14	30.87
MSTC66	14	3	65 3/4	(66) 10d	8515	8565	7455	8565	37.88	38.10	33.16	38.10
MSTC78					8515	8565	7455	8565	8515	8565	7455	8565
ST6236					3735	4295	3270	3760	16.61	19.11	14.55	16.73
MST126		2 1/8	26	(22) 10d x 1 1/2"	2825	3250	2475	2850	12.57	14.46	11.01	12.68
MST136					4110	4725	3600	4140	18.28	21.02	16.01	18.42
MST148					5650	6500	4955	5695	25.13	28.91	22.04	25.33
MST160	12	2 1/8	60	(56) 10d x 1 1/2"	7195	7360	6305	7250	32.01	32.74	28.05	32.25
MST172					7360	7360	7240	7360	32.74	32.74	32.21	32.74
MST127					2685	3090	2355	2710	11.94	13.75	10.48	12.06
MST37		2 1/8	37 1/2	(38) 8d	3930	4515	3440	3960	17.48	20.08	15.30	17.62
MST48					5170	5945	4530	5210	23.00	26.45	20.15	23.18
HRS416Z					2400	2760	2120	2440	10.68	12.28	9.43	10.85
MST60	10	2 1/8	60	(64) 8d	6620	7610	5800	6670	29.45	33.85	25.80	29.67
MST72					8065	9135	7065	8125	35.88	40.64	31.43	36.14

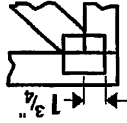
1. Factored resistances have been increased 15% for earthquake or wind loading with no further increase allowed.
2. Use half of the nails in each member being connected to achieve the listed resistances.
3. Nails: 10d = 0.148" dia. x 3" long, 10d x 1 1/2" = 0.148" dia. x 1 1/2" long, 8d = 0.131" dia. x 2 1/2" long. See pp. 22–23 for other nail sizes and information.



Symbols

PLATE LOCATION AND ORIENTATION

Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths or mm. Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0-1/2" from outside edge of truss. This symbol indicates the required direction of slots in connector plates.



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

PLATE SIZE

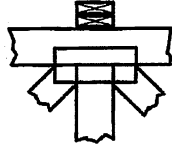
4 X 4

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



Indicated by symbol shown and/or by text in the bracing section of the output. Use T, I or Eliminator bracing if indicated.

BEARING

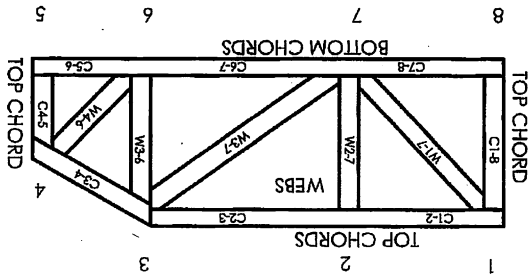


Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur.

Industry Standards:
 TPIC: Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses.
 DSB-89: Design Standard for Bracing.
 Building Component Safety Information.
 Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

Numbering System

6-4-8
 dimensions shown in ft-in-sixteenths or mm
 (Drawings not to scale)



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

CCMC Reports:
 11996-L, 10319-L, 13270-L, 12691-R

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MITTEK
POWER TO PERFORM™

Mitek Engineering Reference Sheet: MII-7473C rev. 10-08

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 BCSI.
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 TPIC.
7. Design assumes trusses will be suitably protected from the environment in accord with TPIC.
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 at 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 treated 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 TPIC Quality Criteria.