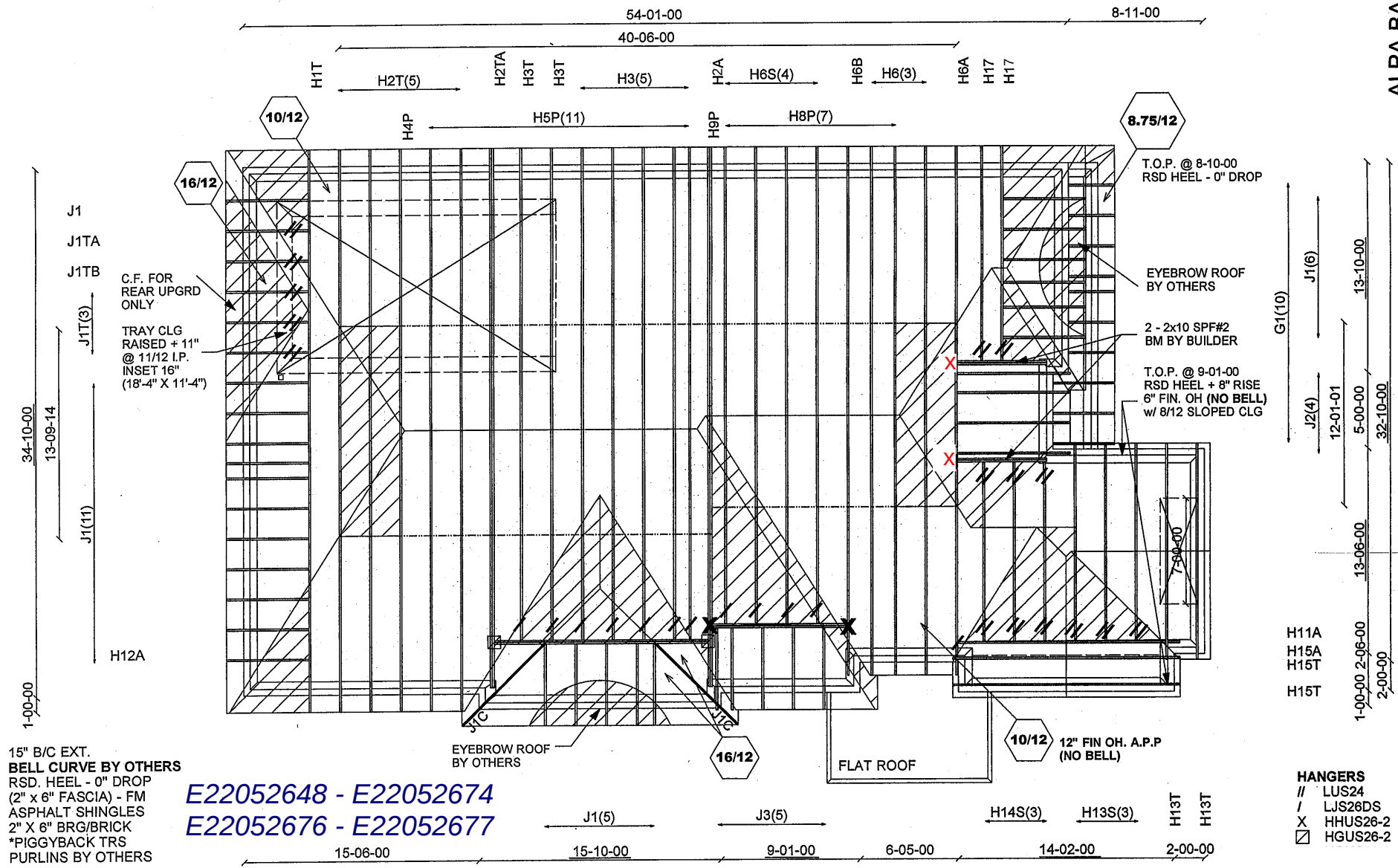




E22052648 - E22052674
E22052676 - E22052677

PL#99352, 100885, 105728, 106357, 116457

ALL CONVENTIONAL FRAMING TO CONFORM WITH PART 9 O.B.C. LATEST EDITION. ROOF RAFTERS THAT CROSS OVER TRUSSES TO BE 2X4 SPF #2 @ 24" O.C WITH A VERT. POST TO THE TRUSS UNDERNEATH AT EACH CROSS POINT. VERT. POSTS LONGER THAN 6' TO HAVE LATERAL BRACING SO THAT THE DISTANCE BETWEEN END POINTS & BETWEEN ROWS OF BRACING DOES NOT EXCEED 6'

Mitek V. 8.2.0
CONVENTIONAL FRAMING BY OTHERS

	Job Track: 45147	Builder / Location: GOLD PARK HOMES / VAUGHAN		Model / Elevation: "BROOKVALLEY"		STD OR REAR UPG.
	Layout ID: 292614K	Project: PINE VALLEY		4204 REV1 / A OPT TRAY		(4 BED)
	Plan Log: 95914	Date: 10/8/2021 Designer: AMANDA		THESE DRAWINGS CONSTITUTE THE PROPERTY OF ALPHA 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 ALPHA ROOF TRUSSES INC AND WILL BE RETRACTED BY ALPHA ROOF TRUSSES INC IF UTILIZED FOR ANY OTHER PURPOSE.		

EWP DESIGN INC.

(905) 832-2250

FAX (905) 832-0286

RESPONSIBILITIES AND SPECIFICATIONS

RESPONSIBILITIES

1. EWP DESIGN 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 each drawing meet or exceed the actual dead load imposed by the structure, the live load imposed by the intended use and the snow load imposed by local building code or authorities with jurisdictions.
3. All dimensions are to be verified by the owner, contractor, architect or other authorities with jurisdictions before truss fabrication.
4. EWP DESIGN INC. bears no responsibility for the erection of trusses. Persons erecting trusses are cautioned to seek professional advice regarding the temporary and permanent bracing for the system. Bracing shown on EWP DESIGN INC. drawing is specified for the truss as a component only and forms an integral part of the truss design.
5. It is the truss manufacturer's responsibility to ensure that trusses are manufactured in conformance with specifications of EWP DESIGN INC. as outlined below.

SPECIFICATIONS

1. Trusses designed by EWP DESIGN INC. conform to the relevant section of the Ontario Building Code of Canada (Part 9 or Part 4) or to the Canadian code for farm buildings, whichever applies to the building type, as indicated on the EWP DESIGN INC. drawings, and conform to the design procedures established by the Truss Plate Institute of Canada. Unit stresses used for truss designs are as per the edition of CSA-O86 shown on EWP DESIGN INC. drawings.
2. Lumber is to be the size, species and grade as specified on EWP DESIGN INC. drawings.
3. Moisture content of lumber shall not exceed 19% in service unless specified otherwise.
4. Metal connector plates shall be applied to both faces of truss at each joint and shall be positioned as specified.
5. Top chords of trusses are assumed to be continuously braced laterally by roof sheathing or by purlins at intervals not exceeding 12.5 times the thickness of top chord member.
6. Bottom chords shall be laterally braced at intervals not exceeding 3M (10') o.c., where rigid ceiling is not applied directly to the underside of chords.

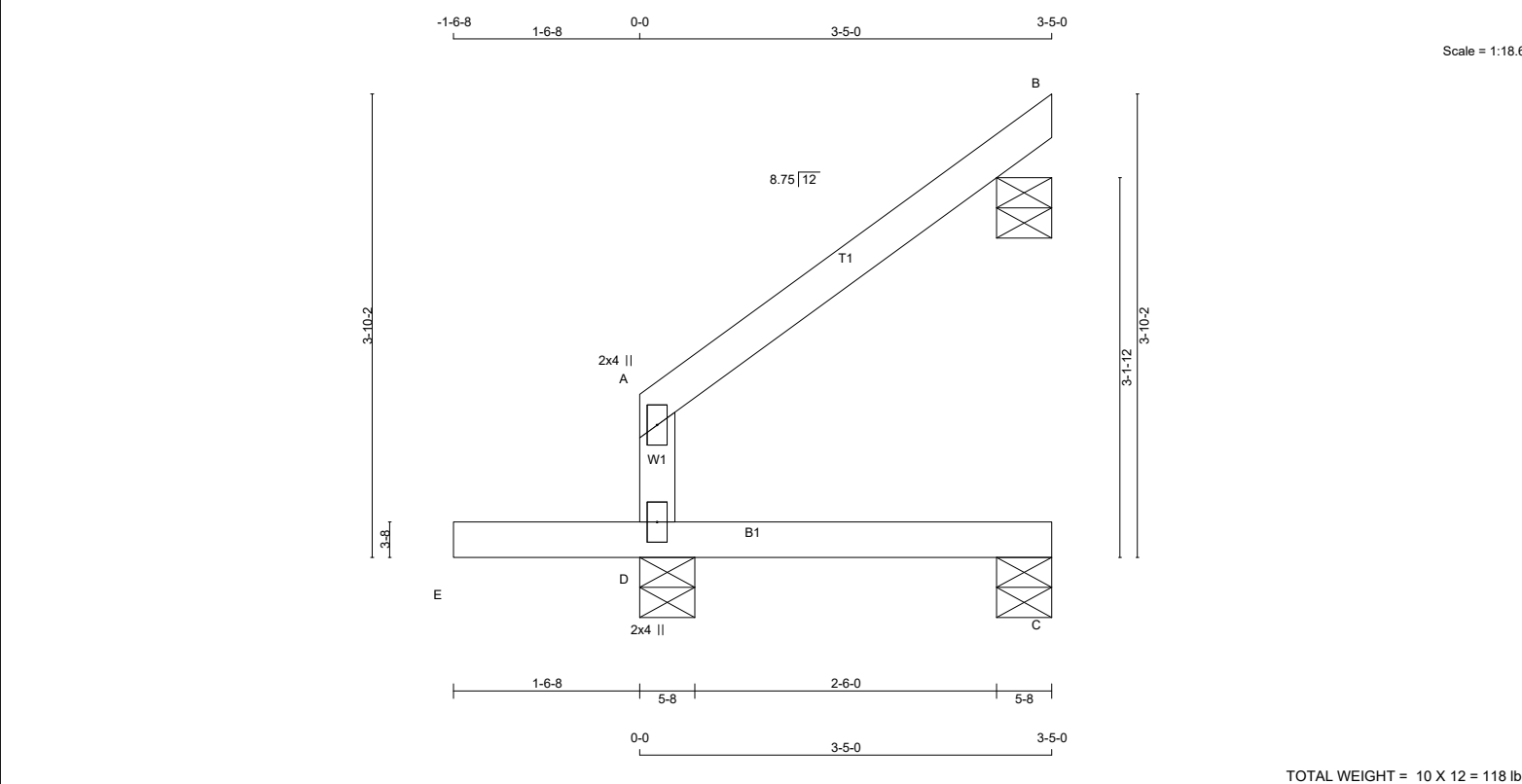
THESE DRAWINGS CONSTITUTE THE PROPERTY OF EWP DESIGN INC., SHALL NOT BE REPRODUCED, PUBLISHED, OR REDISTRIBUTED IN ANY MANNER OR UTILIZED FOR ANY PURPOSE OTHER THAN THE MANUFACTURE OF TRUSSES BY THE ALPA LUMBER GROUP, AND WILL BE RETRACTED BY EWP DESIGN INC. IF UTILIZED FOR ANY OTHER PURPOSE.

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	G1		1	TRUSS DESC. JT 45147	E22052648

Alpa Roof Truss, Maple

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ID:84qOFYESM8s1JmDO6 uSGRyQWjP-wq29YqIf2bLk3kZe3lBSJPYxzSan4mJKpxV71tz8FFV



TOTAL WEIGHT = 10 X 12 = 118 lb

LUMBER N. L. G. A. RULES CHORDS SIZE LUMBER DESCR. A - B 2x4 DRY No.2 SPF D - A 2x4 DRY No.2 SPF E - C 2x4 DRY No.2 SPF DRY: SEASONED LUMBER.						DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER BEARINGS <table><tr><th rowspan="2">JT</th><th colspan="2">FACTORED GROSS REACTION</th><th colspan="2">MAXIMUM FACTORED GROSS REACTION</th><th colspan="2">INPUT BRG</th><th colspan="2">REQRD BRG</th></tr><tr><th>VERT</th><th>HORZ</th><th>DOWN</th><th>HORZ</th><th>UPLIFT</th><th>IN-SX</th><th>IN-SX</th></tr><tr><td>C</td><td>24</td><td>0</td><td>27</td><td>0</td><td>0</td><td>5-8</td><td>1-8</td></tr><tr><td>B</td><td>114</td><td>0</td><td>114</td><td>0</td><td>0</td><td>5-8</td><td>5-8</td></tr><tr><td>D</td><td>341</td><td>0</td><td>341</td><td>0</td><td>0</td><td>5-8</td><td>1-8</td></tr></table> BEVELED PLATE OR SHIM REQUIRED TO PROVIDE FULL BEARING SURFACE WITH TRUSS CHORD AT JT(S): B UNFACTORED REACTIONS <table><tr><th rowspan="2">JT</th><th colspan="2">1ST LCASE</th><th colspan="5">MAX./MIN. COMPONENT REACTIONS</th></tr><tr><th>COMBINED</th><th>SNOW</th><th>LIVE</th><th>PERM.LIVE</th><th>WIND</th><th>DEAD</th><th>SOIL</th></tr><tr><td>C</td><td>19</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>19 / 0</td><td>0 / 0</td></tr><tr><td>B</td><td>79</td><td>61 / 0</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>18 / 0</td><td>0 / 0</td></tr><tr><td>D</td><td>243</td><td>147 / 0</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>96 / 0</td><td>0 / 0</td></tr></table> BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) C, B, D 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: (7) <table><tr><th rowspan="2">MEMB.</th><th colspan="2">C H O R D S</th><th colspan="2">F A C T O R E D</th><th rowspan="2">MAX. FORCE (LBS)</th><th rowspan="2">VERT. LOAD (PLF)</th><th rowspan="2">LC1</th><th rowspan="2">MAX CSI (LC)</th><th rowspan="2">UNBRAC LENGTH</th><th rowspan="2">MEMB. FORCE (LBS)</th><th rowspan="2">MAX CSI (LC)</th></tr><tr><th>FR-TO</th><th>MAX. FACTORED</th><th>FROM</th><th>TO</th></tr><tr><td>A- B</td><td></td><td>-11 / 0</td><td>-78.0</td><td>-78.0</td><td>0.11 (1)</td><td></td><td></td><td>6.25</td><td></td><td></td><td></td></tr><tr><td>D- A</td><td></td><td>-152 / 0</td><td>0.0</td><td>0.0</td><td>0.09 (1)</td><td></td><td></td><td>7.81</td><td></td><td></td><td></td></tr><tr><td>E- D</td><td></td><td>0 / 0</td><td>-96.5</td><td>-96.5</td><td>0.18 (7)</td><td></td><td></td><td>10.00</td><td></td><td></td><td></td></tr><tr><td>D- C</td><td></td><td>0 / 0</td><td>-18.5</td><td>-18.5</td><td>0.06 (4)</td><td></td><td></td><td>10.00</td><td></td><td></td><td></td></tr></table> <u>CANTILEVER ANALYSIS HAS BEEN CONSIDERED IN THIS DESIGN</u> <u>PATTERN-LOADING CHECK APPLIED TO THIS TRUSS.</u>										JT	FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG		VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	C	24	0	27	0	0	5-8	1-8	B	114	0	114	0	0	5-8	5-8	D	341	0	341	0	0	5-8	1-8	JT	1ST LCASE		MAX./MIN. COMPONENT REACTIONS					COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL	C	19	0 / 0	0 / 0	0 / 0	0 / 0	19 / 0	0 / 0	B	79	61 / 0	0 / 0	0 / 0	0 / 0	18 / 0	0 / 0	D	243	147 / 0	0 / 0	0 / 0	0 / 0	96 / 0	0 / 0	MEMB.	C H O R D S		F A C T O R E D		MAX. FORCE (LBS)	VERT. LOAD (PLF)	LC1	MAX CSI (LC)	UNBRAC LENGTH	MEMB. FORCE (LBS)	MAX CSI (LC)	FR-TO	MAX. FACTORED	FROM	TO	A- B		-11 / 0	-78.0	-78.0	0.11 (1)			6.25				D- A		-152 / 0	0.0	0.0	0.09 (1)			7.81				E- D		0 / 0	-96.5	-96.5	0.18 (7)			10.00				D- C		0 / 0	-18.5	-18.5	0.06 (4)			10.00				DESIGN CRITERIA SPECIFIED LOADS: TOP CH. LL = 21.0 PSF DL = 6.0 PSF BOT CH. LL = 0.0 PSF DL = 7.4 PSF TOTAL LOAD = 34.4 PSF SPACING = 24.0 IN. C/C THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 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 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD ALLOWABLE DEFL.(TL)= L/360 (0.19") CALCULATED VERT. DEFL.(TL) = L/ 999 (0.00") CANTILEVER DEFLECTION: ALLOWABLE DEFL.(LL)= L/120 (0.19") CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01") ALLOWABLE DEFL.(TL)= L/120 (0.19") CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01") CSI: TC=0.11/1.00 (A-B:1) , BC=0.18/1.00 (D-E:7) , WB=0.00/1.00 (n/a:0) , SSI=0.13/1.00 (D-E:7) 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 LEFT 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= 0.10 (A) (INPUT = 0.90) JSI METAL= 0.08 (A) (INPUT = 1.00)					
JT	FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG																																																																																																																																																													
	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX																																																																																																																																																													
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D- A		-152 / 0	0.0	0.0	0.09 (1)			7.81																																																																																																																																																												
E- D		0 / 0	-96.5	-96.5	0.18 (7)			10.00																																																																																																																																																												
D- C		0 / 0	-18.5	-18.5	0.06 (4)			10.00																																																																																																																																																												

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2



JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H1T	1		JT 45147	E22052649

Alpa Roof Truss, Maple

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 ID:MF8iiriaTok7DlbpT4B71Xys4PG-sDAwzWmvaCbSJ2i1AjDxPqd9CG7vYSedHF E6iz8ff

Scale = 1:58.

<

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H2A		2	JT 45147	E22052650(2)

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:30 2022 Page 2

ID:MF8iiriaTok7DlbpT4B71Xys4PG-oclgOBo95pr9YLsPI8FPUFjUY3mN0OiwkYTLAez8ffR

PLATES (table is in inches)

JT	TYPE	PLATES	W	LEN	Y	X
O	BS-t	MT20	4.0	6.0		
P	BMWWW-t	MT20	5.0	6.0		
Q	BS-t	MT20	4.0	6.0		
R	BMWW-t	MT20	5.0	6.0	2.25	3.00
S	BMWW+t	MT20	4.0	10.0	4.50	2.00
T	BMWW-t	MT20	8.0	9.0	4.25	4.25
U	BMV1+t	MT20	6.0	10.0	Edge	

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

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2



JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	TRUSS DESC.	DRWG NO.
292614K	H2TA	2		JT 45147		E22052652

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:34 2022 Page 1
ID:MF8iiriaTok7DlbpT4B71Xys4PG-hNXBEZrq92Lb1zAAX KLe5tF8gDnyAXVfARZKPz8ff

Scale = 1:56.5

1-6-8 0-0 1-10-0 1-10-0 2-10-0 3-7-8 6-5-8 3-7-8 10-1-1 2-0-15 12-2-0 13-2-0 5-4-8 18-6-8 5-4-8 23-10-15 3-6-8 27-5-7 3-6-8 30-11-15 3-0-1 34-0-0

9-9-15

10.00 | 12

5x6 ||

2x4 ||

6x7 =

11.00 | 12

33-1-0

1-6-8 5-8

0-0 1-10-0 1-10-0 2-10-0 3-7-8 6-5-8 3-7-8 10-1-1 2-0-15 12-2-0 13-2-0 5-4-8 18-6-8 5-4-8 23-10-15 3-6-8 27-5-7 3-6-8 30-11-15 3-0-1 34-0-0

1-5-1 11-0

5x8 ||

8x9 ||

6x10 ||

6x12 ||

TOTAL WEIGHT = 2 X 219 = 438 lb

LUMBER		N. L. G. A. RULES		LUMBER		DESCR.	
CHORDS	SIZE						
A - E	2x4	DRY	No.2		SPF		
E - I	2x4	DRY	No.2		SPF		
I - L	2x4	DRY	No.2		SPF		
Y - A	2x6	DRY	No.2		SPF		
M - L	2x6	DRY	No.2		SPF		
Z - X	2x4	DRY	No.2		SPF		
X - W	2x4	DRY	No.2		SPF		
W - T	2x4	DRY	No.2		SPF		
T - S	2x4	DRY	No.2		SPF		
S - Q	2x6	DRY	No.2		SPF		
Q - M	2x6	DRY	No.2		SPF		
ALL WEBS EXCEPT		2x3	DRY	No.2		SPF	
G - R	2x4	DRY	No.2		SPF		
R - I	2x4	DRY	No.2		SPF		
N - K	2x4	DRY	No.2		SPF		
N - L	2x4	DRY	No.2		SPF		

DRY: SEASONED LUMBER.

DESIGN CONSISTS OF 2 TRUSSES BUILT SEPARATELY THEN FASTENED TOGETHER AS FOLLOWS:

CHORDS	#ROWS	SURFACE SPACING (IN)	LOAD(PLF)
TOP CHORDS : (0.122"x3") SPIRAL NAILS			
A-E	1	12	TOP
E-I	1	12	TOP
I-L	1	12	TOP
Y-A	2	12	TOP
M-L	2	12	TOP
BOTTOM CHORDS : (0.122"x3") SPIRAL NAILS			
Z-X	1	12	TOP
X-W	1	12	TOP
W-T	1	12	TOP
T-S	1	12	TOP
S-Q	2	12	TOP
Q-M	2	12	SIDE(165.4)
WEBS : (0.122"x3") SPIRAL NAILS			
2x3	1	6	
K-N	2	2	SIDE(1426.4)
2x4	1	6	

NAILS TO BE DRIVEN FROM ONE SIDE ONLY.

GIRDER NAILING ASSUMES NAILED HANGERS ARE FASTENED WITH MIN. 3-0 INCH NAILS.

TOP - COMPONENTS ARE LOADED FROM THE TOP AND MUST BE PLACED ON TOP EDGE OF ALL PLIES FOR THE LOAD TO BE TRANSFERRED TO EACH PLY.

SIDE - PLF SHOWN IS THE EQUIVALENT UDL APPLIED TO ONE SIDE THAT THE CORRESPONDING NAILING PATTERN SHALL BE CAPABLE OF TRANSFERING. REMAINING PLF MUST BE APPLIED ON THE OPPOSITE SIDE OR ON THE TOP.

PLATES (table is in inches)						
JT	TYPE	PLATES	W	LEN	Y	X
A	TMWV+p	MT20	5.0	6.0	2.00	2.25
B	TMWW-t	MT20	4.0	6.0	1.75	3.00
C	TMWW-t	MT20	4.0	6.0		
D	TMWW-t	MT20	4.0	6.0		
E	TTWW-I	MT20	4.0	6.0	2.00	4.50
F	TMW+w	MT20	2.0	4.0		
G	TMWWWW-t	MT20	5.0	6.0		
H	TMW+w	MT20	2.0	4.0		

LATERAL BRACE(S) SHOWN SHALL BE
2X4 SPF#2

A circular professional engineer seal for the Province of Ontario. The outer ring contains the text "LICENSED PROFESSIONAL ENGINEER" at the top and "PROVINCE OF ONTARIO" at the bottom. The center of the seal features the name "Y. WIDYA" and the license number "100225448". Below the license number is the date "06/07/2022". A blue ink signature is written across the seal, overlapping the name and license number.

N	30-11-14	-6083	-6083	---	FRONT	VERT	TOTAL	---	C1
<u>CONNECTION REQUIREMENTS</u>									
1)	C1: A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED.								

DESIGN CRITERIA

*** SPECIAL LOADS ANALYSIS ***

GEOMETRY AND/OR BASIC LOADS CHANGED BY USER.

LOADS WERE DERIVED FROM USER INPUT NO FURTHER MODIFICATIONS WERE MADE

SPECIFIED LOADS:

TOP CH.	LL =	21.0	PSF
	DL =	6.0	PSF
BOT CH.	LL =	0.0	PSF
	DL =	7.4	PSF
TOTAL LOAD	=	34.4	PSF

SPACING = 24.0 IN./C

LOADING IN FLAT SECTION BASED ON PIGGYBACK TRUSS WITH SLOPES OF 6.00/12 AND -6.00/12 AND RESPECTIVE HEEL HEIGHTS OF 0-0 AND 0-0 AND AN ADDITIONAL DEAD LOAD OF 6.0 P.S.F.

GIRDER TYPE: CStd Girder
 START DISTANCE = 30-11-14
 START SPAN CARRIED = 3-10-8
 END DISTANCE = 34-0-0
 END SPAN CARRIED = 3-10-8
 END WALL WIDTH = 0-0
 APPLIED TO FRONT SIDE OF BOTTOM CHORD.
 - ADDTL LOADS BASED ON 55 % OF GSL.

*** NON STANDARD GIRDER ***
 ADDTL USER-DEFINED LOADS APPLIED TO ALL LOAD CASES.

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 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 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.13")
 CALCULATED VERT. DEFL.(LL)= L/ 999 (0.08")
 ALLOWABLE DEFL.(TL)= L/360 (1.13")
 CALCULATED VERT. DEFL.(TL)= L/ 999 (0.14")

CANTILEVER DEFLECTION:
 ALLOWABLE DEFL.(LL)= L/120 (0.19")
 CALCULATED VERT. DEFL.(LL)= L/ 999 (0.01")
 ALLOWABLE DEFL.(TL)= L/120 (0.19")
 CALCULATED VERT. DEFL.(TL)= L/ 999 (0.01")

CSI: TC=0.29/1.00 (K-L:1) , BC=0.55/1.00 (N-O:1) ,
 WB=0.94/1.00 (G-S:1) , SSI=0.13/1.00 (H-I:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

PLATE GRIP(DRY)	SHEAR (PSI)	SECTION (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= 0.88 (N) (INPUT = 0.90)
 JSI METAL= 0.91 (N) (INPUT = 1.00)

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H2TA		2	JT 45147	E22052652(2)

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:34 2022 Page 2

ID:MF8iiriaTok7DlbpT4B71Xys4PG-hNXBEZrg92Lb1zAAX_KLe5tF8gDnyAXVfARZKPz8fFN

PLATES (table is in inches)						
JT	TYPE	PLATES	W	LEN	Y	X
I	TTWW-I	MT20	4.0	6.0	2.00	4.25
J	TMWW-t	MT20	4.0	6.0	2.00	2.50
K	TMWW-t	MT20	4.0	6.0	1.75	1.75
L	TMVW-t	MT20	5.0	8.0	1.75	3.25
M	BMV1+t	MT20	6.0	10.0	Edge	0.50
N	BMWW+t	MT20	6.0	12.0	5.25	2.00
O	BMWW+t	MT20	4.0	6.0	3.00	1.75
P, U, V						
P	BMWW-t	MT20	4.0	6.0		
Q	BS-t	MT20	4.0	6.0		
R	BMWWWW-t	MT20	5.0	6.0		
S	BBW-h	MT20	8.0	9.0		
T	BBWWWW-p	MT20	5.0	8.0	3.00	4.50
W	BBWW-I	MT20	6.0	7.0		
X	BBWW-I	MT20	4.0	6.0	2.00	4.50
Y	BMV1+p	MT20	2.0	4.0		

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

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2



JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H3	1		JT 45147	E22052653

Alpa Roof Truss, Maple

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 ID:MF8iiriaTok7DlbpT4B71Xys4PG-9Z5ZRvslwMTSe6lN5hraBIQLw4cbhiBfuqB6srz8fF

1-6-8 0-0 5-1-12 5-1-12 4-11-4 10-1-1 6-10-15 17-0-0 6-10-15 23-10-15 3-4-7 27-3-7 3-6-15 30-10-6
 Scale = 1:51.6

10.00/12

3-8 9-9-15 4-0-7 30-10-6

1-6-8 5-8 30-4-14 0-0 5-1-12 5-1-12 4-11-4 10-1-1 6-10-15 17-0-0 6-10-15 23-10-15 6-11-7 30-10-6

TOTAL WEIGHT = 5 X 158 = 789 lb

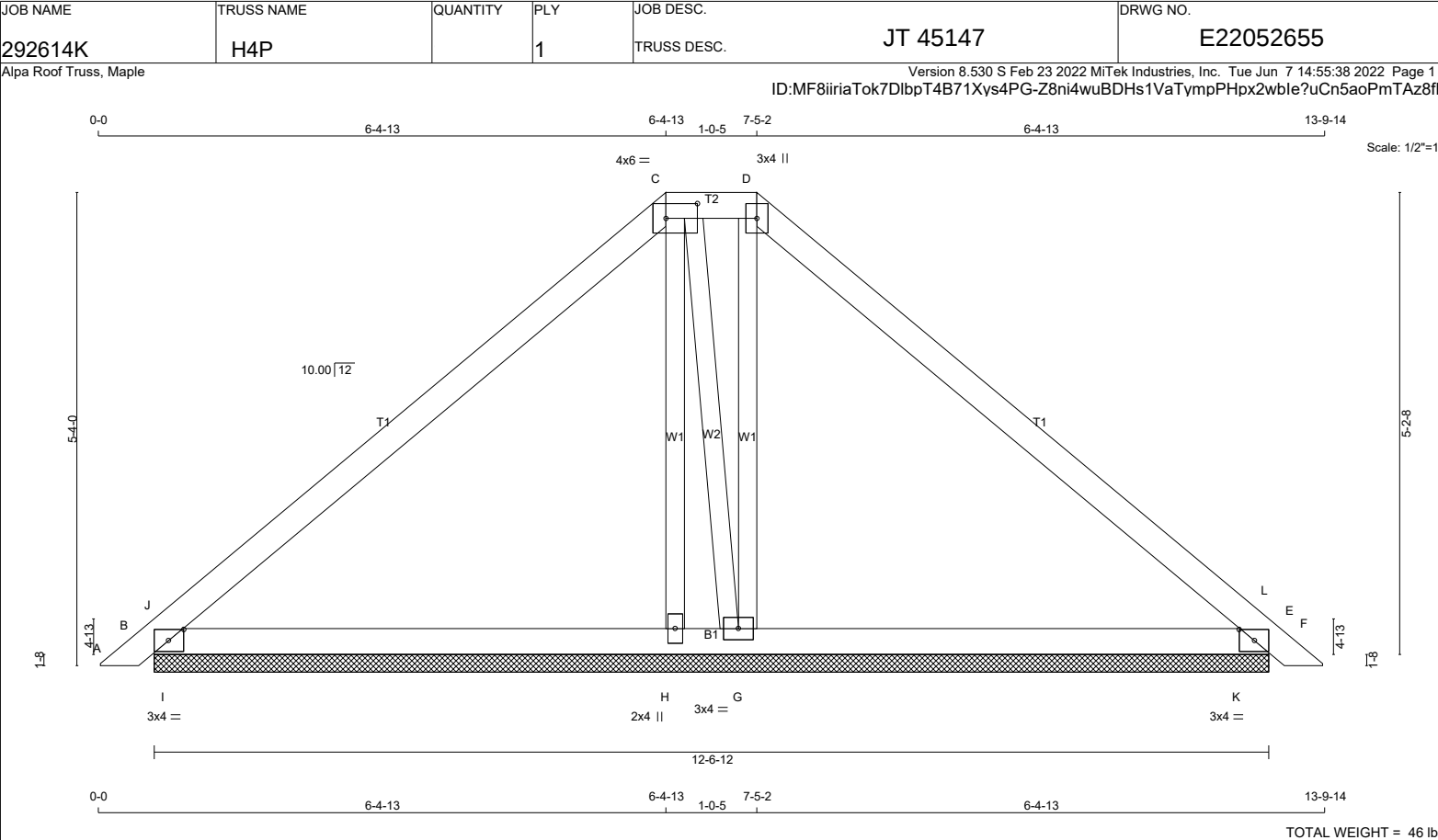
[illegible]

LATERAL BRACE(S) SHOWN SHALL BE
2X4 SPF#2

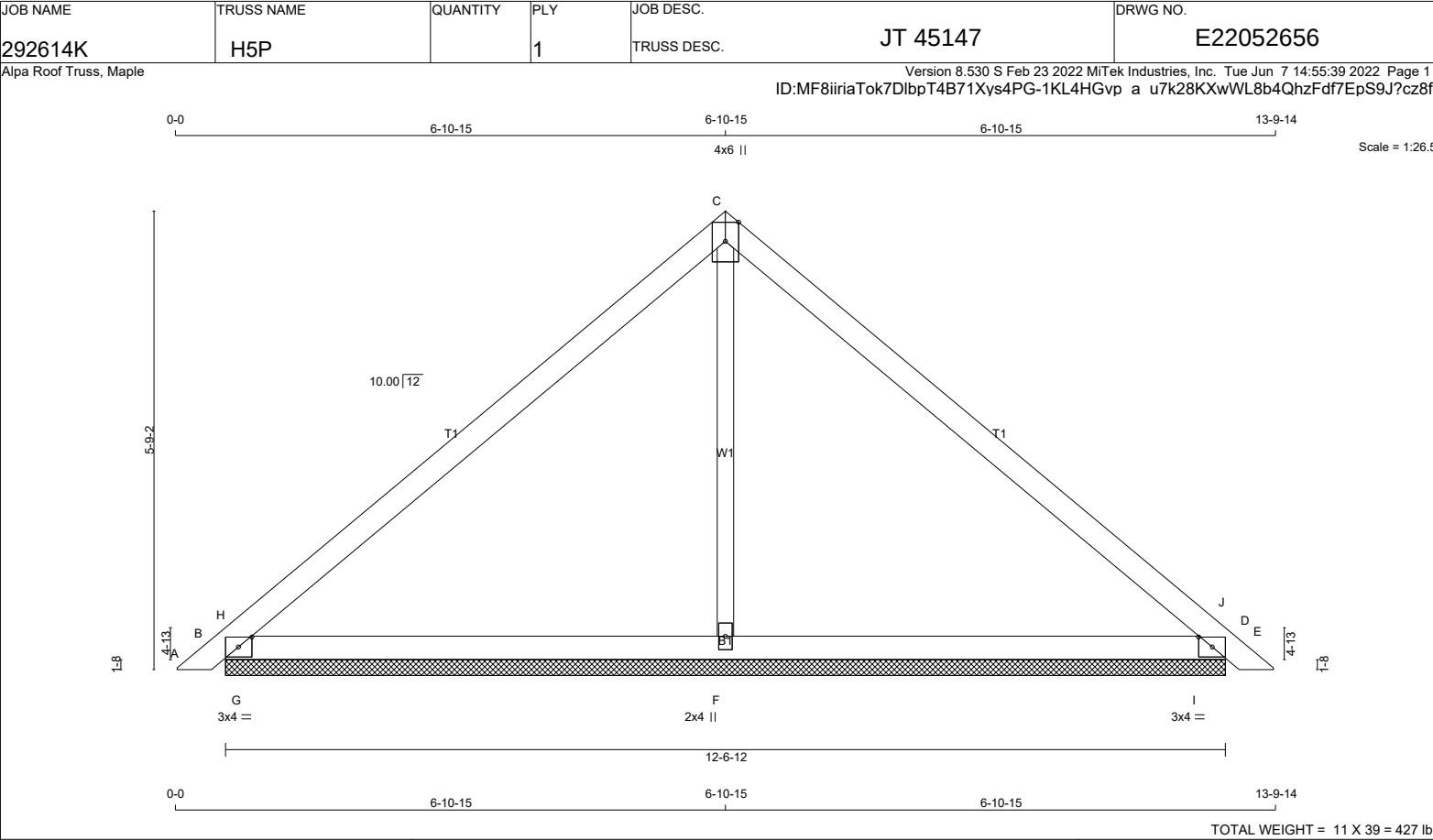


[illegible]

</



LUMBER N. L. G. A. RULES <table><tr><th>CHORDS</th><th>SIZE</th><th>LUMBER</th><th>DESCR.</th></tr><tr><td>A - C</td><td>2x4</td><td>DRY</td><td>No.2</td></tr><tr><td>C - D</td><td>2x4</td><td>DRY</td><td>No.2</td></tr><tr><td>D - F</td><td>2x4</td><td>DRY</td><td>No.2</td></tr><tr><td>B - E</td><td>2x4</td><td>DRY</td><td>No.2</td></tr><tr><td>ALL WEBS</td><td>2x3</td><td>DRY</td><td>No.2</td></tr><tr><td colspan="4">DRY: SEASONED LUMBER.</td></tr></table>							CHORDS	SIZE	LUMBER	DESCR.	A - C	2x4	DRY	No.2	C - D	2x4	DRY	No.2	D - F	2x4	DRY	No.2	B - E	2x4	DRY	No.2	ALL WEBS	2x3	DRY	No.2	DRY: SEASONED LUMBER.				DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER BEARINGS <table><tr><th>JT</th><th>FACTORED GROSS REACTION VERT</th><th>FACTORED GROSS REACTION HORZ</th><th>MAXIMUM FACTORED GROSS REACTION DOWN</th><th>MAXIMUM FACTORED GROSS REACTION HORZ</th><th>INPUT BRG UPLIFT</th><th>REQRD BRG IN-SX</th></tr><tr><td>B</td><td>453</td><td>0</td><td>453</td><td>0</td><td>0</td><td>12-6-12</td></tr><tr><td>E</td><td>448</td><td>0</td><td>448</td><td>0</td><td>0</td><td>12-6-12</td></tr><tr><td>H</td><td>158</td><td>0</td><td>158</td><td>0</td><td>0</td><td>12-6-12</td></tr><tr><td>G</td><td>233</td><td>0</td><td>233</td><td>0</td><td>0</td><td>12-6-12</td></tr></table> UNFACTORED REACTIONS <table><tr><th>JT</th><th>1ST LCASE COMBINED</th><th>MAX. SNOW</th><th>MIN. LIVE</th><th>COMPONENT REACTIONS PERM. LIVE</th><th>WIND</th><th>DEAD</th><th>SOIL</th></tr><tr><td>B</td><td>321</td><td>210 / 0</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>110 / 0</td><td>0 / 0</td></tr><tr><td>E</td><td>317</td><td>207 / 0</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>110 / 0</td><td>0 / 0</td></tr><tr><td>H</td><td>116</td><td>53 / 0</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>63 / 0</td><td>0 / 0</td></tr><tr><td>G</td><td>167</td><td>101 / 0</td><td>0 / 0</td><td>0 / 0</td><td>0 / 0</td><td>66 / 0</td><td>0 / 0</td></tr></table> BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, E, H, G 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) <table><tr><th colspan="4">CHORDS</th><th colspan="4">WEBS</th></tr><tr><th>MEMB.</th><th>MAX. FACTORED FORCE (LBS)</th><th>FACTORED VERT. LOAD (PLF)</th><th>LC1 MAX CSI (LC)</th><th>MEMB.</th><th>MAX. FACTORED FORCE (LBS)</th><th>FACTORED VERT. LOAD (PLF)</th><th>LC1 MAX CSI (LC)</th></tr><tr><td>FR-TO</td><td></td><td>FROM</td><td>TO</td><td>FR-TO</td><td></td><td>FROM</td><td>TO</td></tr><tr><td>A- B</td><td>0 / 12</td><td>-78.0</td><td>-78.0</td><td>0.02 (1)</td><td>10.00</td><td>H- C</td><td>-41 / 0</td><td>0.02 (1)</td></tr><tr><td>B- J</td><td>-61 / 137</td><td>-78.0</td><td>-78.0</td><td>0.21 (1)</td><td>6.25</td><td>C- G</td><td>-36 / 0</td><td>0.01 (1)</td></tr><tr><td>J- C</td><td>-257 / 0</td><td>-78.0</td><td>-78.0</td><td>0.33 (1)</td><td>6.25</td><td>G- D</td><td>-81 / 0</td><td>0.03 (1)</td></tr><tr><td>C- D</td><td>-178 / 0</td><td>-78.0</td><td>-78.0</td><td>0.01 (1)</td><td>6.25</td><td>I- J</td><td>-758 / 0</td><td>0.00 (1)</td></tr><tr><td>D- L</td><td>-250 / 0</td><td>-78.0</td><td>-78.0</td><td>0.33 (1)</td><td>6.25</td><td>K- L</td><td>-759 / 0</td><td>0.00 (1)</td></tr><tr><td>L- E</td><td>-60 / 145</td><td>-78.0</td><td>-78.0</td><td>0.21 (1)</td><td>6.25</td><td></td><td></td><td></td></tr><tr><td>E- F</td><td>0 / 12</td><td>-78.0</td><td>-78.0</td><td>0.02 (1)</td><td>10.00</td><td></td><td></td><td></td></tr><tr><td>B- I</td><td>0 / 185</td><td>-18.5</td><td>-18.5</td><td>0.28 (1)</td><td>10.00</td><td></td><td></td><td></td></tr><tr><td>I- H</td><td>0 / 185</td><td>-18.5</td><td>-18.5</td><td>0.28 (1)</td><td>10.00</td><td></td><td></td><td></td></tr><tr><td>H- G</td><td>0 / 184</td><td>-18.5</td><td>-18.5</td><td>0.22 (1)</td><td>10.00</td><td></td><td></td><td></td></tr><tr><td>G- K</td><td>0 / 179</td><td>-18.5</td><td>-18.5</td><td>0.28 (1)</td><td>10.00</td><td></td><td></td><td></td></tr><tr><td>K- E</td><td>0 / 179</td><td>-18.5</td><td>-18.5</td><td>0.28 (1)</td><td>10.00</td><td></td><td></td><td></td></tr></table>							JT	FACTORED GROSS REACTION VERT	FACTORED GROSS REACTION HORZ	MAXIMUM FACTORED GROSS REACTION DOWN	MAXIMUM FACTORED GROSS REACTION HORZ	INPUT BRG UPLIFT	REQRD BRG IN-SX	B	453	0	453	0	0	12-6-12	E	448	0	448	0	0	12-6-12	H	158	0	158	0	0	12-6-12	G	233	0	233	0	0	12-6-12	JT	1ST LCASE COMBINED	MAX. SNOW	MIN. LIVE	COMPONENT REACTIONS PERM. LIVE	WIND	DEAD	SOIL	B	321	210 / 0	0 / 0	0 / 0	0 / 0	110 / 0	0 / 0	E	317	207 / 0	0 / 0	0 / 0	0 / 0	110 / 0	0 / 0	H	116	53 / 0	0 / 0	0 / 0	0 / 0	63 / 0	0 / 0	G	167	101 / 0	0 / 0	0 / 0	0 / 0	66 / 0	0 / 0	CHORDS				WEBS				MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	LC1 MAX CSI (LC)	MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	LC1 MAX CSI (LC)	FR-TO		FROM	TO	FR-TO		FROM	TO	A- B	0 / 12	-78.0	-78.0	0.02 (1)	10.00	H- C	-41 / 0	0.02 (1)	B- J	-61 / 137	-78.0	-78.0	0.21 (1)	6.25	C- G	-36 / 0	0.01 (1)	J- C	-257 / 0	-78.0	-78.0	0.33 (1)	6.25	G- D	-81 / 0	0.03 (1)	C- D	-178 / 0	-78.0	-78.0	0.01 (1)	6.25	I- J	-758 / 0	0.00 (1)	D- L	-250 / 0	-78.0	-78.0	0.33 (1)	6.25	K- L	-759 / 0	0.00 (1)	L- E	-60 / 145	-78.0	-78.0	0.21 (1)	6.25				E- F	0 / 12	-78.0	-78.0	0.02 (1)	10.00				B- I	0 / 185	-18.5	-18.5	0.28 (1)	10.00				I- H	0 / 185	-18.5	-18.5	0.28 (1)	10.00				H- G	0 / 184	-18.5	-18.5	0.22 (1)	10.00				G- K	0 / 179	-18.5	-18.5	0.28 (1)	10.00				K- E	0 / 179	-18.5	-18.5	0.28 (1)	10.00				DESIGN CRITERIA SPECIFIED LOADS: <table><tr><td>TOP</td><td>CH.</td><td>LL</td><td>=</td><td>21.0</td><td>PSF</td></tr><tr><td></td><td></td><td>DL</td><td>=</td><td>6.0</td><td>PSF</td></tr><tr><td>BOT</td><td>CH.</td><td>LL</td><td>=</td><td>0.0</td><td>PSF</td></tr><tr><td></td><td></td><td>DL</td><td>=</td><td>7.4</td><td>PSF</td></tr><tr><td colspan="5">TOTAL LOAD = 34.4 PSF</td></tr></table> SPACING = 24.0 IN. C/C LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 2015 THIS DESIGN COMPLIES WITH: - PART 9 OF BCBC 2018 , ABC 2019 - PART 9 OF OBC 2012 (2019 AMENDMENT) - CSA 086-14 - TPIC 2014 (55 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD CSI: TC=0.33/1.00 (C-J:1) , BC=0.28/1.00 (B-I:1) , WB=0.03/1.00 (D-G:1) , SSI=0.59/1.00 (E-K: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) (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= 0.37 (B) (INPUT = 0.90) JSI METAL= 0.10 (B) (INPUT = 1.00)							TOP	CH.	LL	=	21.0	PSF			DL	=	6.0	PSF	BOT	CH.	LL	=	0.0	PSF			DL	=	7.4	PSF	TOTAL LOAD = 34.4 PSF				
CHORDS	SIZE	LUMBER	DESCR.																																																																																																																																																																																																																																																																																									
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B	453	0	453	0	0	12-6-12																																																																																																																																																																																																																																																																																						
E	448	0	448	0	0	12-6-12																																																																																																																																																																																																																																																																																						
H	158	0	158	0	0	12-6-12																																																																																																																																																																																																																																																																																						
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H	116	53 / 0	0 / 0	0 / 0	0 / 0	63 / 0	0 / 0																																																																																																																																																																																																																																																																																					
G	167	101 / 0	0 / 0	0 / 0	0 / 0	66 / 0	0 / 0																																																																																																																																																																																																																																																																																					
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JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H6A		2	JT 45147	E22052659

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:44 2022 Page 2

ID:MF8iiriaTok7DlbpT4B71Xys4PG-OI8zK_zxo7cAEVx564Wh2Cl_fic1Hnc_yks4qqz8fD

PLATES (table is in inches)

JT	TYPE	PLATES	W	LEN	Y	X
O	BS-t	MT20	4.0	6.0		
P	BMWWW-t	MT20	5.0	6.0		
R	BS-t	MT20	4.0	6.0		
U	BMV1+p	MT20	2.0	4.0		

LATERAL BRACE(S) SHOWN SHALL BE
2X4 SPF#2



JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	TRUSS DESC.	DRWG NO.
292614K	H6B		2		JT 45147	E22052658

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:44 2022 Page 1
 ID:MF8iiriaTok7DlbpT4B71Xys4PG-OI8zK zxo7cAEVx564Wh2CI?MihsHnc yk4qqz8fR

Scale = 1:54.2

LUMBER							
N. L. G. A. RULES							
CHORDS	SIZE			LUMBER	DESCR.		
A - D	2x4	DRY	No.2	SPF			
D - F	2x6	DRY	No.2	SPF			
F - I	2x4	DRY	No.2	SPF			
U - A	2x6	DRY	No.2	SPF			
K - I	2x6	DRY	No.2	SPF			
V - R	2x6	DRY	No.2	SPF			
R - O	2x6	DRY	No.2	SPF			
O - J	2x6	DRY	No.2	SPF			
ALL WEBS EXCEPT	2x3	DRY	No.2	SPF			
T - B	2x4	DRY	No.2	SPF			
D - P	2x4	DRY	No.2	SPF			
P - F	2x4	DRY	No.2	SPF			
L - H	2x4	DRY	No.2	SPF			
A - T	2x4	DRY	No.2	SPF			
L - I	2x4	DRY	No.2	SPF			
DRY: SEASONED LUMBER.							
DESIGN CONSISTS OF <u>2</u> TRUSSES BUILT SEPARATELY THEN FASTENED TOGETHER AS FOLLOWS:							
CHORDS	#ROWS	SURFACE SPACING (IN)		LOAD(PLF)			
TOP CHORDS : (0.122"x3") SPIRAL NAILS							
A-D	1	12		TOP			
F-I	1	12		TOP			
D-F	2	12		TOP			
U-A	2	12		TOP			
K-I	2	12		TOP			
BOTTOM CHORDS : (0.122"x3") SPIRAL NAILS							
V-R	2	12		TOP			
R-O	2	12		TOP			
O-J	2	12		SIDE(183.1)			
WEBS : (0.122"x3") SPIRAL NAILS							
2x3	1	6					
H-L	2	3		SIDE(774.9)			
2x4	1	6					
NAILS TO BE DRIVEN FROM ONE SIDE ONLY.							
GIRDER NAILING ASSUMES NAILED HANGERS ARE FASTENED WITH MIN. 3-0 INCH NAILS.							
TOP - COMPONENTS ARE LOADED FROM THE TOP AND MUST BE PLACED ON TOP EDGE OF ALL PLIES FOR THE LOAD TO BE TRANSFERRED TO EACH PLY.							
SIDE - PLF SHOWN IS THE EQUIVALENT UDL APPLIED TO ONE SIDE THAT THE CORRESPONDING NAILING PATTERN SHALL BE CAPABLE OF TRANSFERING. REMAINING PLF MUST BE APPLIED ON THE OPPOSITE SIDE OR ON THE TOP.							
PLATES (table is in inches)							
JT	TYPE	PLATES	W	LEN	Y	X	
A	TMVW+p	MT20	5.0	6.0	2.00	2.25	
B	TMWW-t	MT20	4.0	6.0	2.00	2.75	
C	TMWW-t	MT20	4.0	6.0			
D	TTWW-I	MT20	5.0	8.0	3.25	3.50	
E	TMW+w	MT20	2.0	4.0			
F	TTWW-I	MT20	5.0	8.0	3.25	3.50	
G	TMWW-t	MT20	4.0	6.0			
H	TMWW-t	MT20	4.0	6.0	2.00	2.75	
I	TMVW+p	MT20	5.0	6.0	2.00	2.25	
K	BMV1+p	MT20	3.0	4.0			
L	BMWW-t	MT20	4.0	10.0	5.00	1.75	
M, N, Q, S, T							
M	BMWW-t	MT20	4.0	6.0			

<

DESIGN CRITERIA

*** SPECIAL LOADS ANALYSIS ***

GEOMETRY AND/OR BASIC LOADS CHANGED BY USER.

LOADS WERE DERIVED FROM USER INPUT
NO FURTHER MODIFICATIONS WERE MADE

SPECIFIED LOADS:

TOP	CH.	LL	=	21.0	PSF
		DL	=	6.0	PSF
BOT	CH.	LL	=	0.0	PSF
		DL	=	7.4	PSF
TOTAL		LOAD	=	34.4	PSF

SPACING = 24.0 IN./C

LOADING IN FLAT SECTION BASED ON
PIGGYBACK TRUSS WITH SLOPES OF 6.00/12
AND -6.00/12 AND RESPECTIVE HEEL HEIGHTS
OF 0-0 AND 0-0 AND AN ADDITIONAL DEAD
LOAD OF 6.0 P.S.F.

*** NON STANDARD GIRDER ***

ADD'TL USER-DEFINED LOADS APPLIED TO ALL
LOAD CASES.

THIS TRUSS IS DESIGNED FOR RESIDENTIAL
OR SMALL BUILDING REQUIREMENTS OF PART
9, NBCC 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.

(5% OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F.
RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED
ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.07")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.03")
ALLOWABLE DEFL.(TL)= L/360 (1.07")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.06")

CANTILEVER DEFLECTION:

ALLOWABLE DEFL.(LL)= L/120 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.00")
ALLOWABLE DEFL.(TL)= L/120 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")

CSI: TC=0.18/1.00 (I-K:1) , BC=0.31/1.00 (L-M:1) ,
WB=0.52/1.00 (G-N:1) , SSI=0.11/1.00 (D-E:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

PLATE	GRIP(DRY)		SHEAR		SECTION	
	(PSI)	(PLI)	(PSI)	(PLI)	(PSI)	(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= 0.88 (L) (INPUT = 0.90)
JSI METAL= 0.76 (L) (INPUT = 1.00)

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H6B		2	JT 45147	E22052660

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:44 2022 Page 2

ID:MF8iiriaTok7DlbpT4B71Xys4PG-OI8zK_zxo7cAEVx564Wh2CI?MihsHnc_yks4ggz8ffD

PLATES (table is in inches)

JT	TYPE	PLATES	W	LEN	Y	X
O	BS-t	MT20	4.0	6.0		
P	BMWWW-t	MT20	5.0	6.0		
R	BS-t	MT20	4.0	6.0		
U	BMV1+p	MT20	2.0	4.0		

LATERAL BRACE(S) SHOWN SHALL BE
2X4 SPF#2



JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H6S	1		JT 45147	E22052660

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:46 2022 Page 1
ID:MF8iiriaTok7DlbpT4B71Xys4PG-KhGjlf CKksuTp5UEVY97dNGVWMIlhLGQ2LBliz8ff

Scale = 1:50.0

10.00' 12"

3'-9"

9'-3-15"

3'-5-1"

9'-3-15"

1-6-8 0-0 5-1-12 5-1-12 4-11-4 10-1-1 6-0-8 16-1-9 6-0-8 22-2-2 3-8-14 25-11-0 3-11-6 29-10-6

1-6-8 5-8 29-4-14 0-0 5-1-12 5-1-12 4-11-4 10-1-1 6-0-8 16-1-9 6-0-8 22-2-2 7-8-4 29-10-6

TOTAL WEIGHT = 4 X 154 = 616 LB

NUMBER N. L. G. A. RULES CHORDS SIZE LUMBER DESCR. A - C 2x4 DRY No.2 SPF C - E 2x4 DRY No.2 SPF E - G 2x4 DRY No.2 SPF N - A 2x4 DRY No.2 SPF H - G 2x4 DRY No.2 SPF O - K 2x4 DRY No.2 SPF K - H 2x4 DRY No.2 SPF ALL WEBS 2x3 DRY No.2 SPF EXCEPT C - J 2x4 DRY No.2 SPF J - E 2x4 DRY No.2 SPF
--

DRY: SEASONED LUMBER.

PLATES (table is in inches)

JT

TYPE

PLATES

W

LEN

Y

X

A

TMVW-t

MT20

4.0

6.0

1.50

2.75

B

TMWW-t

MT20

4.0

6.0

C

TTWW-I

MT20

4.0

6.0

2.00

4.25

D

TMV+w

MT20

2.0

4.0

E

TTWW-I

MT20

4.0

6.0

2.00

4.25

F

TMWW-t

MT20

4.0

6.0

2.00

2.75

G

TMV+p

MT20

2.0

4.0

H

BMVW1-t

MT20

4.0

6.0

1.75

3.00

I, L, M

I

BMWW-t

MT20

4.0

6.0

J

BMWWW-t

MT20

5.0

6.0

K

BS-t

MT20

4.0

6.0

N

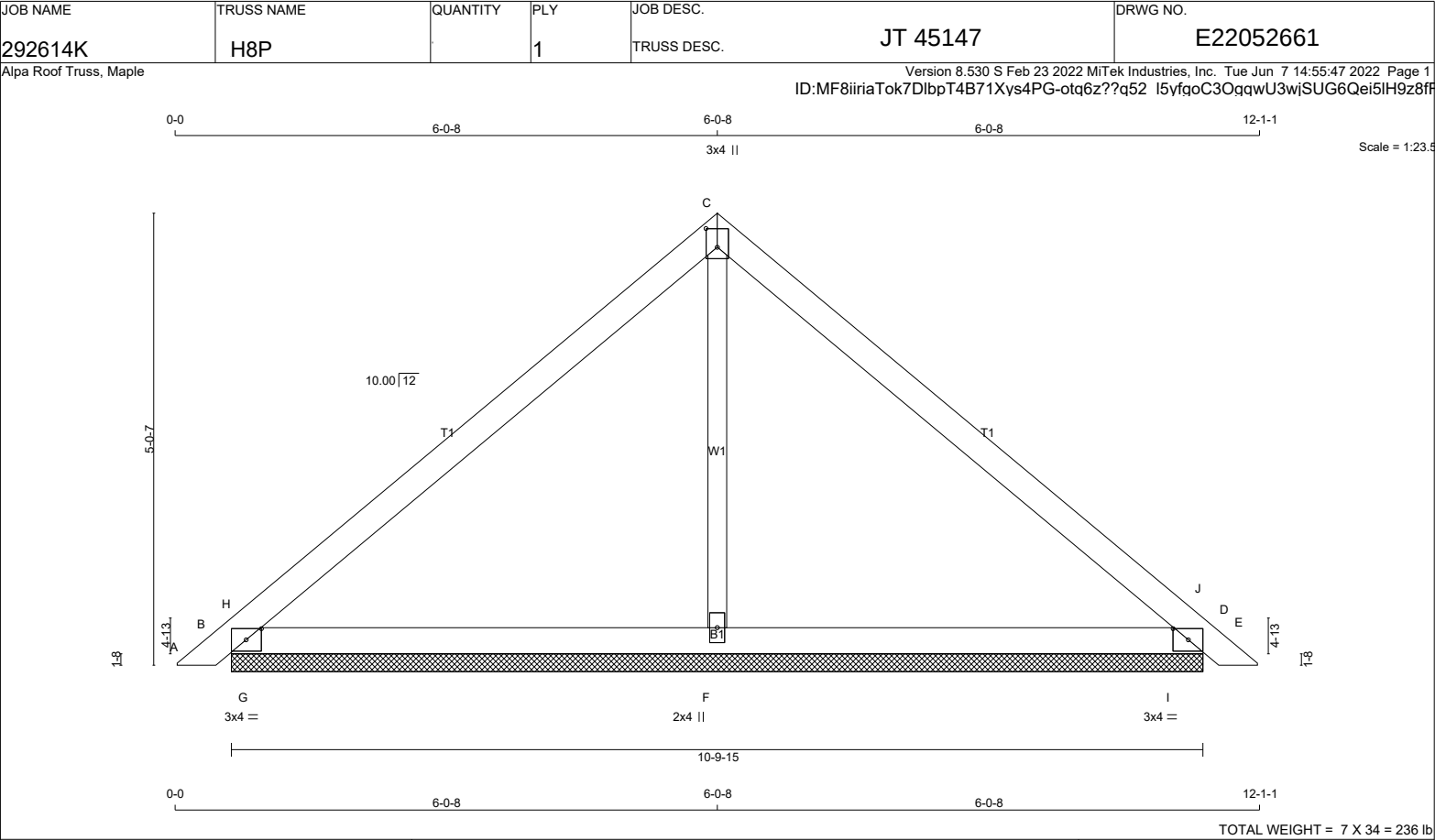
BMV1+p

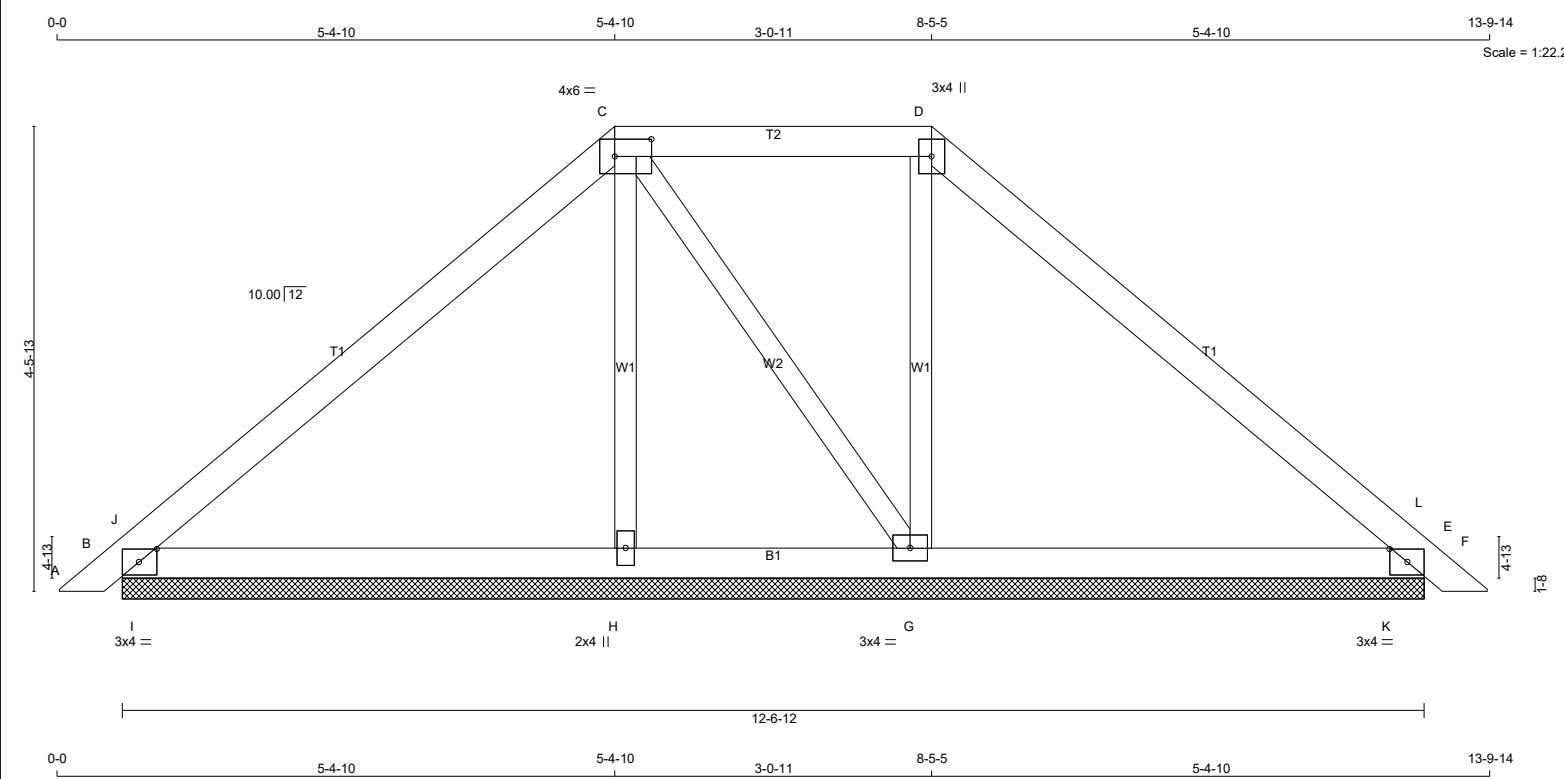
MT20

2.0

4.0

 DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER BEARINGS FACTORED MAXIMUM FACTORED INPUT REQRD GROSS REACTION GROSS REACTION BRG BRG DOWN HORZ UPLIFT IN-SX IN-SX JT VERT HORZ 1673 0 1673 0 0 5-8 1-13 H 1538 0 1538 0 0 MECHANICAL A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED AT JOINT H. MINIMUM BEARING LENGTH AT JOINT H = 1-11. UNFACTORED REACTIONS 1ST LCASE MAX./MIN. COMPONENT REACTIONS JT COMBINED SNOW LIVE PERM.LIVE WIND DEAD SOIL N 1200 692 / 0 0 / 0 0 / 0 0 / 0 508 / 0 0 / 0 H 1105 627 / 0 0 / 0 0 / 0 0 / 0 479 / 0 0 / 0 BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) N BRACING FOR SECTION C-E, MAX. PURLIN SPACING = 2.00 FT. FOR OTHER SECTIONS, TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 4.90 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. 1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF D-J, E-I, F-H. END VERTICAL(S) MUST BE SHEATHED OR HAVE BRACES AS INDICATED IN THE MAX. UNBRACED LENGTH COLUMN OF THE TABLE BELOW LOADING TOTAL LOAD CASES: (4) CHORDS MEMB. MAX. FACTORED FORCE (LBS) FACTORED VERT. LOAD (PLF) LC1 MAX. CSI (LC) UNBRAC LENGTH FR-TO FROM TO FR-TO A- B B- C C- D D- E E- F F- G N- A H- G -1626 / 0 -1469 / 0 -1280 / 0 -1280 / 0 -1269 / 0 0 / 22 -1483 / 0 -117 / 0 -78.0 -78.0 -93.0 -93.0 -78.0 -78.0 0.0 0.0 -78.0 -78.0 -93.0 -93.0 -78.0 -78.0 0.0 0.0 0.31 (1) 0.29 (1) 0.46 (1) 0.46 (1) 0.16 (1) 0.18 (1) 0.15 (1) 0.02 (1) 4.90 5.11 2.00 2.00 5.56 10.00 6.73 7.81 WEBS MEMB. MAX. FACTORED FORCE (LBS) MAX. CSI (LC) FR-TO FROM TO FR-TO M- B B- L L- C C- J J- D J- E I- E I- F A- M F- H -170 / 0 -248 / 0 0 / 287 0 / 326 -689 / 0 0 / 606 -42 / 36 0 / 227 0 / 1300 -1598 / 0 0.08 (1) 0.26 (1) 0.06 (1) 0.05 (1) 0.45 (1) 0.10 (1) 0.03 (1) 0.05 (4) 0.29 (1) 0.57 (1) O- N N- M M- L L- K K- J J- I I- H 0 / 0 0 / 0 0 / 1272 0 / 1106 0 / 1106 0 / 955 0 / 836 -96.5 -18.5 -18.5 -18.5 -18.5 -18.5 -18.5 -96.5 -18.5 -18.5 -18.5 -18.5 -18.5 -18.5 0.16 (1) 0.10 (4) 0.27 (1) 0.24 (1) 0.24 (1) 0.35 (4) 0.33 (4) 10.00 10.00 10.00 1 |





TOTAL WEIGHT = 2 X 44 = 87 lb

LUMBER				
N. L. G. A. RULES				
CHORDS	SIZE	LUMBER	DESCR.	
A - C	2x4	DRY	No.2	SPF
C - D	2x4	DRY	No.2	SPF
D - F	2x4	DRY	No.2	SPF
B - E	2x4	DRY	No.2	SPF
ALL WEBS	2x3	DRY	No.2	SPF
DRY: SEASONED LUMBER.				

DESIGN CONSISTS OF 2 TRUSSES BUILT SEPARATELY THEN FASTENED TOGETHER AS FOLLOWS:

CHORDS #ROWS	SURFACE SPACING (IN)	LOAD(PLF)
TOP CHORDS : (0.122"x3") SPIRAL NAILS		
A- C	1 12	TOP
C- D	1 12	TOP
D- F	1 12	TOP
BOTTOM CHORDS : (0.122"x3") SPIRAL NAILS		
B- E	1 12	TOP
WEBS : (0.122"x3") SPIRAL NAILS		
2x3	1 6	

NAILS TO BE DRIVEN FROM ONE SIDE ONLY.

TOP - COMPONENTS ARE LOADED FROM THE TOP AND MUST BE PLACED ON TOP EDGE OF ALL PLIES FOR THE LOAD TO BE TRANSFERRED TO EACH PLY.

PLATES (table is in inches)						
JT	TYPE	PLATES	W	LEN	Y	X
B	TMB1-I	MT20	3.0	4.0	1.50	2.00
C	TTWW-I	MT20	4.0	6.0	2.00	4.25
D	TTW+p	MT20	3.0	4.0		
E	TMB1-I	MT20	3.0	4.0	1.50	2.00
G	BMWW1-t	MT20	3.0	4.0		
H	BMW1+w	MT20	2.0	4.0		

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

BEARINGS

JT	FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG	
	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	
B	389	0	389	0	0	12-6-12	1-8	
E	368	0	368	0	0	12-6-12	1-8	
H	222	0	222	0	0	12-6-12	1-8	
G	314	0	314	0	0	12-6-12	1-8	

UNFACTORED REACTIONS							
JT	1ST LCASE COMBINED		MAX./MIN. COMPONENT REACTIONS				
	SNOW	LIVE	PERM	LIVE	WIND	DEAD	SOIL
B	275	182 / 0	0 / 0	0 / 0	0 / 0	92 / 0	0 / 0
E	260	171 / 0	0 / 0	0 / 0	0 / 0	90 / 0	0 / 0
H	161	83 / 0	0 / 0	0 / 0	0 / 0	78 / 0	0 / 0
G	224	135 / 0	0 / 0	0 / 0	0 / 0	89 / 0	0 / 0

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

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				WEBS			
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	LC1 MAX CSI (LC)	MEMB.	MAX. FACTORED FORCE (LBS)	MAX CSI (LC)	
FR-TO				FR-TO			
A- B	0 / 12	-78.0	-78.0 0.01 (1)	10.00	H- C	-113 / 0	0.02 (1)
B- J	-64 / 8	-78.0	-78.0 0.05 (1)	6.25	C- G	-44 / 0	0.01 (1)
J- C	-212 / 0	-78.0	-78.0 0.11 (1)	6.25	G- D	-169 / 0	0.02 (1)
C- D	-125 / 0	-78.0	-78.0 0.06 (1)	6.25	I- J	-483 / 0	0.00 (1)
D- L	-180 / 0	-78.0	-78.0 0.11 (1)	6.25	K- L	-487 / 0	0.00 (1)
L- E	-58 / 43	-78.0	-78.0 0.06 (1)	6.25			
E- F	0 / 12	-78.0	-78.0 0.01 (1)	10.00			
B- I	0 / 154	-18.5	-18.5 0.09 (1)	10.00			
I- H	0 / 154	-18.5	-18.5 0.09 (1)	10.00			
H- G	0 / 151	-18.5	-18.5 0.06 (1)	10.00			
G- K	0 / 130	-18.5	-18.5 0.09 (1)	10.00			
K- E	0 / 130	-18.5	-18.5 0.09 (1)	10.00			

DESIGN CRITERIA

SPECIFIED LOADS:

TOP	CH.	LL	=	21.0	PSF
		DL	=	6.0	PSF
BOT	CH.	LL	=	0.0	PSF
		DL	=	7.4	PSF
TOTAL	LOAD	=	34.4	PSF	

SPACING = 24.0 IN. C/C

LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM

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

THIS DESIGN COMPLIES WITH:

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

(55 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD

CSI: TC=0.11/1.00 (C-J:1) , BC=0.09/1.00 (H-I:1) , WB=0.02/1.00 (D-G:1) , SSI=0.19/1.00 (E-K: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)	(PLI)	(PLI)
	MAX MIN	MAX MIN	MAX MIN
MT20	650	371	1747 788 1987 1873

PLATE PLACEMENT TOL. = 0.250 inches

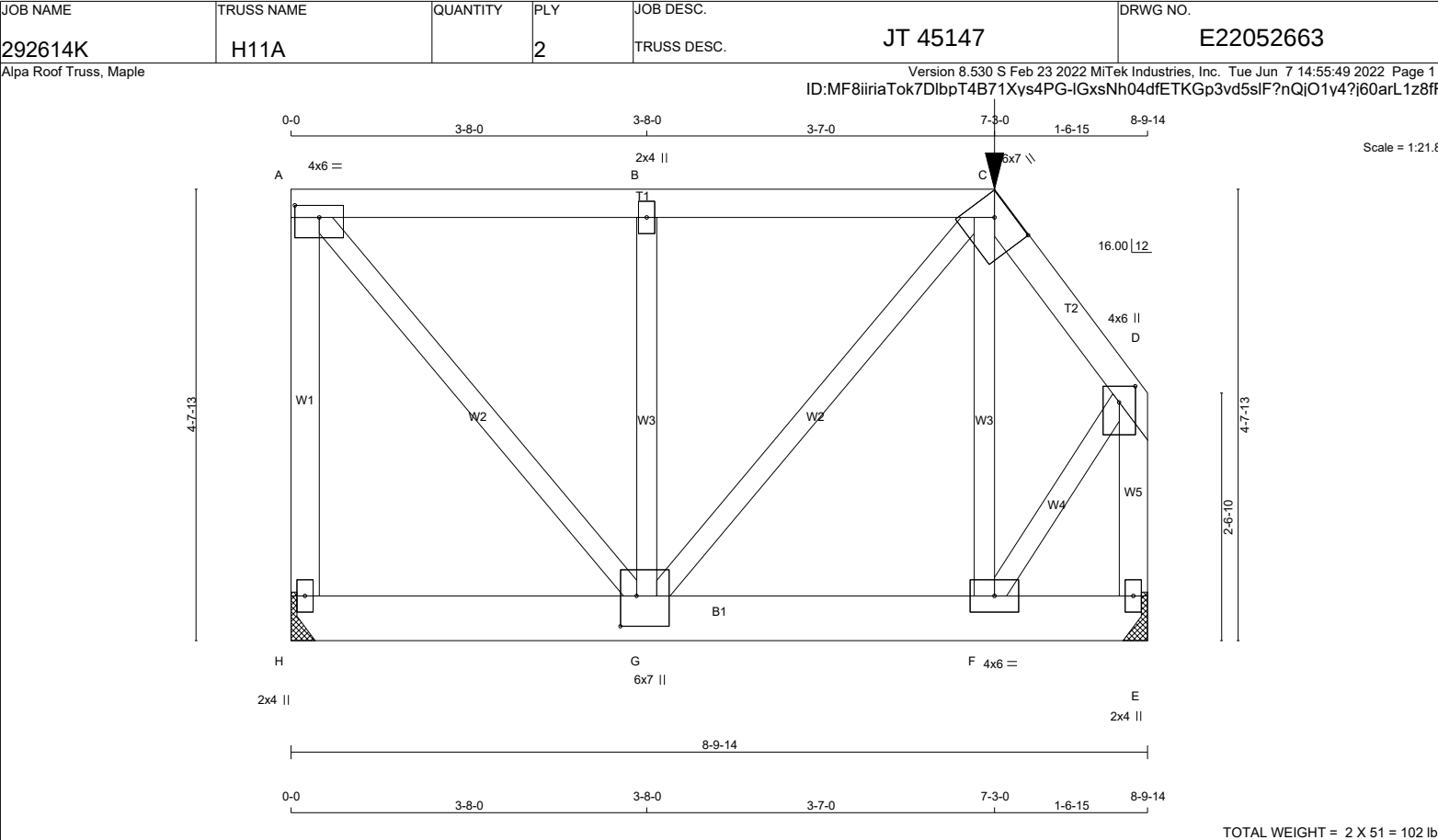
PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.16 (B) (INPUT = 0.90)

JSI METAL= 0.04 (B) (INPUT = 1.00)

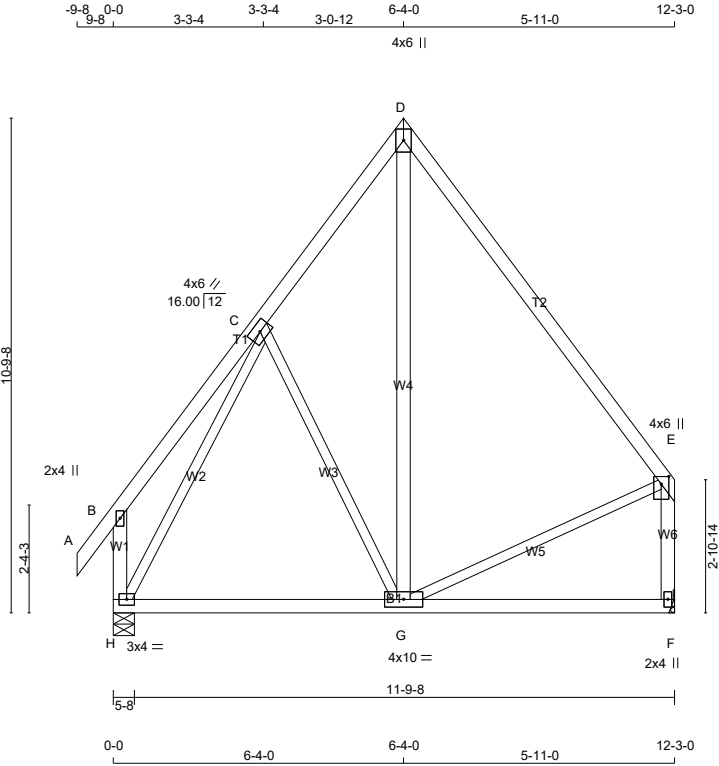
LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2





[illegible]

NUMBER N. L. G. A. RULES CHORDS SIZE LUMBER DESCR. A - B 2x4 DRY No.2 SPF B - D 2x4 DRY No.2 SPF D - E 2x4 DRY No.2 SPF J - A 2x6 DRY No.2 SPF F - E 2x6 DRY No.2 SPF J - F 2x6 DRY No.2 SPF ALL WEBS 2x3 DRY No.2 SPF EXCEPT	DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE BUILDING DESIGNER BEARINGS FACTORED MAXIMUM FACTORED INPUT REQRD GROSS REACTION GROSS REACTION BRG BRG JT VERT HORZ DOWN HORZ UPLIFT IN-SX IN-SX J 5928 0 5928 0 0 MECHANICAL F 5928 0 5928 0 0 MECHANICAL A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED AT JOINT J, F. MINIMUM BEARING LENGTH AT JOINT J = 4-0, JOINT F = 4-0. UNFACTORED REACTIONS 1ST LCASE MAX./MIN. COMPONENT REACTIONS JT COMBINED SNOW LIVE PERM.LIVE WIND DEAD SOIL J 4226 2579 / 0 0 / 0 0 / 0 0 / 0 1648 / 0 0 / 0 F 4226 2579 / 0 0 / 0 0 / 0 0 / 0 1648 / 0 0 / 0 BRACING TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 4.57 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 MAX. FACTORED FACTORED WEBS MAX. FACTORED MEMB. FORCE VERT. LOAD LC1 MAX MAX. MEMB. FORCE MAX (LBS) (PLF) CSI (LC) UNBRAC (LBS) CSI (LC) FR-TO FROM TO LENGTH FR-TO A- B -4119 / 0 -78.0 -78.0 0.18 (1) 4.57 I- B 0 / 1426 0.18 (1) B- C -3238 / 0 -114.5 -114.5 0.15 (1) 5.04 B- H 0 / 1607 0.20 (1) C- D -3238 / 0 -114.5 -114.5 0.15 (1) 5.04 H- C -406 / 0 0.17 (1) D- E -4119 / 0 -78.0 -78.0 0.18 (1) 4.57 H- D 0 / 1607 0.20 (1) J- A -4875 / 0 0.0 0.0 0.23 (1) 6.58 G- D 0 / 1426 0.18 (1) F- E -4875 / 0 0.0 0.0 0.23 (1) 6.58 A- I 0 / 2842 0.35 (1) J- I 0 / 0 -723.3 -723.3 0.31 (1) 10.00 I- H 0 / 2477 -723.3 -723.3 0.47 (1) 10.00 H- G 0 / 2477 -723.3 -723.3 0.47 (1) 10.00 G- F 0 / 0 -723.3 -723.3 0.31 (1) 10.00 FACTORED CONCENTRATED LOADS (LBS) JT LOC. LC1 MAX- MAX+ FACE DIR. TYPE HEEL CONN. B 3-10-8 -120 -120 --- BACK VERT TOTAL --- C1 D 11-1-8 -120 -120 --- BACK VERT TOTAL --- C1 CONNECTION REQUIREMENTS 1) C1: A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED.	DESIGN CRITERIA SPECIFIED LOADS: TOP CH. LL = 21.0 PSF DL = 6.0 PSF BOT CH. LL = 0.0 PSF DL = 7.4 PSF TOTAL LOAD = 34.4 PSF SPACING = 24.0 IN./C/C LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM GIRDER TYPE: CStdGirder START DISTANCE = 5-0 START SPAN CARRIED = 30-10-6 END DISTANCE = 14-7-0 END SPAN CARRIED = 30-10-6 END WALL WIDTH = 0-0 APPLIED TO FRONT SIDE OF BOTTOM CHORD. - ADDT'L LOADS BASED ON 55 % OF GSL. GIRDER TYPE: CPrimeHip SIDE SETBACK = 3-10-8 END SETBACK = 3-10-8 END WALL WIDTH = 0-0 CORNER FRAMING TYPE: CONVENTIONAL END JACK TYPE: CONVENTIONAL APPLIED TO BACK SIDE - ADDT'L LOADS BASED ON 55 % OF GSL. THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 2015 THIS DESIGN COMPLIES WITH: - PART 9 OF CBC 2018 , ABC 2019 - PART 9 OF OBC 2012 (2019 AMENDMENT) - CSA 086-14 - TPIC 2014 (55 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD ALLOWABLE DEFL.(LL)= L/360 (0.47") CALCULATED VERT. DEFL.(LL) = L/ 999 (0.03") ALLOWABLE DEFL.(TL)= L/360 (0.47") CALCULATED VERT. DEFL.(TL) = L/ 999 (0.05") CSI: TC=0.23/1.00 (E-F:1) , BC=0.47/1.00 (G-H:1) , WB=0.35/1.00 (E-G:1) , SSI=0.51/1.00 (I-J:1) DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.00 COMP=1.00 SHEAR=1.00 TENS= 1.00 COMPANION LIVE LOAD FACTOR = 1.00 AUTOSOLVE HEELS OFF TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT . NAIL VALUES PLATE GRIP(DRY) SHEAR SECTION (PSI) (PLI) (PLI)
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TOTAL WEIGHT = 3 X 72 = 215 lb

LUMBER				
N. L. G. A. RULES				
CHORDS	SIZE	LUMBER	DESCR.	
A - D	2x4	DRY	No.2	SPF
D - E	2x4	DRY	1650F 1.5E	SPF
H - B	2x4	DRY	No.2	SPF
F - E	2x4	DRY	No.2	SPF
H - F	2x4	DRY	No.2	SPF
ALL WEBS	2x3	DRY	No.2	SPF
EXCEPT				
G - D	2x4	DRY	No.2	SPF
DRY: SEASONED LUMBER.				

PLATES (table is in inches)					
JT	TYPE	PLATES	W	LEN	Y X
B	TMV+p	MT20	2.0	4.0	
C	TMWW-t	MT20	4.0	6.0	
D	TTW+p	MT20	4.0	6.0	
E	TMVW+p	MT20	4.0	6.0	2.00 2.00
F	BMV1+p	MT20	2.0	4.0	
G	BMWW-t	MT20	4.0	10.0	
H	BMVW1-t	MT20	3.0	4.0	

DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER									
BEARINGS									
JT	FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG		
	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX		
F	591	0	591	0	0	MECHANICAL			
H	662	0	662	0	0	5-8	1-8		
A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED AT JOINT F. MINIMUM BEARING LENGTH AT JOINT F = 1-8.									

UNFACTORED REACTIONS							
JT	1ST LCASE COMBINED		MAX./MIN. COMPONENT REACTIONS				
	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL	
F	421	257 / 0	0 / 0	0 / 0	164 / 0	0 / 0	
H	470	295 / 0	0 / 0	0 / 0	175 / 0	0 / 0	

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

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)									
C H O R D S					W E B S				
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	LC1	MAX CSI (LC)	MAX. UNBRAC LENGTH	MEMB.	MAX. FACTORED FORCE (LBS)	MAX CSI (LC)	
FR-TO		FROM TO				FR-TO			
A- B	0 / 28	-78.0 -78.0	0.05 (1)	10.00	C- G	-105 / 0	0.10 (1)		
B- C	0 / 24	-78.0 -78.0	0.13 (1)	10.00	G- D	0 / 156	0.03 (4)		
C- D	-325 / 0	-78.0 -78.0	0.10 (1)	6.25	H- C	-509 / 0	0.45 (1)		
D- E	-303 / 0	-78.0 -78.0	0.30 (1)	6.25	G- E	0 / 197	0.04 (1)		
H- B	-162 / 0	0.0 0.0	0.02 (1)	7.81					
F- E	-550 / 0	0.0 0.0	0.09 (1)	7.81					
H- G	0 / 231	-18.5 -18.5	0.22 (4)	10.00					
G- F	0 / 0	-18.5 -18.5	0.20 (4)	10.00					

DESIGN CRITERIA

SPECIFIED LOADS:			
TOP CH.	LL	=	21.0 PSF
	DL	=	6.0 PSF
BOT CH.	LL	=	0.0 PSF
	DL	=	7.4 PSF
TOTAL LOAD	=	34.4	PSF

SPACING = 24.0 IN. C/C

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

THIS DESIGN COMPLIES WITH:
- PART 9 OF BCBC 2018 , ABC 2019
- PART 9 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

(55 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (0.41")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.00")
ALLOWABLE DEFL.(TL)= L/360 (0.41")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.04")

CSI: TC=0.30/1.00 (D-E:1) , BC=0.22/1.00 (G-H:4) , WB=0.45/1.00 (C-H:1) , SSI=0.11/1.00 (D-E: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)	(PLI)	(PLI)		
	MAX	MIN	MAX	MIN	MAX
MT20	650	371	1747	788	1987 1873

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.61 (H) (INPUT = 0.90)
JSI METAL= 0.15 (E) (INPUT = 1.00)

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2



JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	H13T		1	TRUSS DESC.	E22052666

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:55:53 2022 Page 1
ID:MF8iiriaTok7DlbpT4B71Xys4PG-d1BND34bhtlvp7q8TAov5AY6LpPuybl1dY3Voz8f

Scale = 1:50.3

The drawing shows a symmetrical roof truss with the following details:

- Dimensions:**
 - Overall width: 11-9-0 (split into 5-8, 7-0-0, and 5-8)
 - Overall height: 10-9-8 (split into 2-4-3 and 8-5-5)
 - Top chord segments: 9-8, 0-0, 2-10-0, 2-10-0, 3-6-0, 6-4-0, 3-6-0, 9-10-0, 2-10-0, 12-8-0, 13-5-8
 - Bottom chord segments: 0-0, 2-10-0, 2-10-0, 3-6-0, 6-4-0, 3-6-0, 9-10-0, 2-10-0, 12-8-0
 - Vertical height from base to peak: 10-9-8
 - Vertical height from base to eave: 2-4-3
 - Vertical height from base to ridge: 8-5-5
- Members and Connections:**
 - Top Chord:** 4x6 // (Double 4x6)
 - Bottom Chord:** 4x6 // (Double 4x6)
 - Vertical Members:** W1, W2, W3, W4, W5 (Double 4x6)
 - Diagonal Members:** B1, B2, B3, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B14, B15, B16, B17, B18, B19, B20, B21, B22, B23, B24, B25, B26, B27, B28, B29, B30, B31, B32, B33, B34, B35, B36, B37, B38, B39, B40, B41, B42, B43, B44, B45, B46, B47, B48, B49, B50, B51, B52, B53, B54, B55, B56, B57, B58, B59, B60, B61, B62, B63, B64, B65, B66, B67, B68, B69, B70, B71, B72, B73, B74, B75, B76, B77, B78, B79, B80, B81, B82, B83, B84, B85, B86, B87, B88, B89, B90, B91, B92, B93, B94, B95, B96, B97, B98, B99, B100, B101, B102, B103, B104, B105, B106, B107, B108, B109, B110, B111, B112, B113, B114, B115, B116, B117, B118, B119, B120, B121, B122, B123, B124, B125, B126, B127, B128, B129, B130, B131, B132, B133, B134, B135, B136, B137, B138, B139, B140, B141, B142, B143, B144, B145, B146, B147, B148, B149, B150, B151, B152, B153, B154, B155, B156, B157, B158, B159, B160, B161, B162, B163, B164, B165, B166, B167, B168, B169, B170, B171, B172, B173, B174, B175, B176, B177, B178, B179, B180, B181, B182, B183, B184, B185, B186, B187, B188, B189, B190, B191, B192, B193, B194, B195, B196, B197, B198, B199, B200, B201, B202, B203, B204, B205, B206, B207, B208, B209, B210, B211, B212, B213, B214, B215, B216, B217, B218, B219, B220, B221, B222, B223, B224, B225, B226, B227, B228, B229, B230, B231, B232, B233, B234, B235, B236, B237, B238, B239, B240, B241, B242, B243, B244, B245, B246, B247, B248, B249, B250, B251, B252, B253, B254, B255, B256, B257, B258, B259, B260, B261, B262, B263, B264, B265, B266, B267, B268, B269, B270, B271, B272, B273, B274, B275, B276, B277, B278, B279, B280, B281, B282, B283, B284, B285, B286, B287, B288, B289, B290, B291, B292, B293, B294, B295, B296, B297, B298, B299, B300, B301, B302, B303, B304, B305, B306, B307, B308, B309, B310, B311, B312, B313, B314, B315, B316, B317, B318, B319, B320, B321, B322, B323, B324, B325, B326, B327, B328, B329, B330, B331, B332, B333, B334, B335, B336, B337, B338, B339, B340, B341, B342, B343, B344, B345, B346, B347, B348, B349, B350, B351, B352, B353, B354, B355, B356, B357, B358, B359, B360, B361, B362, B363, B364, B365, B366, B367, B368, B369, B370, B371, B372, B373, B374, B375, B376, B377, B378, B379, B380, B381, B382, B383, B384, B385, B386, B387, B388, B389, B390, B391, B392, B393, B394, B395, B396, B397, B398, B399, B400, B401, B402, B403, B404, B405, B406, B407, B408, B409, B410, B411, B412, B413, B414, B415, B416, B417, B418, B419, B420, B421, B422, B423, B424, B425, B426, B427, B428, B429, B430, B431, B432, B433, B434, B435, B436, B437, B438, B439, B440, B441, B442, B443, B444, B445, B446, B447, B448, B449, B450, B451, B452, B453, B454, B455, B456, B457, B458, B459, B460, B461, B462, B463, B464, B465, B466, B467, B468, B469, B470, B471, B472, B473, B474, B475, B476, B477, B478, B479, B480, B481, B482, B483, B484, B485, B486, B487, B488, B489, B490, B491, B492, B493, B494, B495, B496, B497, B498, B499, B500, B501, B502, B503, B504, B505, B506, B507, B508, B509, B510, B511, B512, B513, B514, B515, B516, B517, B518, B519, B520, B521, B522, B523, B524, B525, B526, B527, B528, B529, B530, B531, B532, B533, B534, B535, B536, B537, B538, B539, B540, B541, B542, B543, B544, B545, B546, B547, B548, B549, B550, B551, B552, B553, B554, B555, B556, B557, B558, B559, B560, B561, B562, B563, B564, B565, B566, B567, B568, B569, B570, B571, B572, B573, B574, B575, B576, B577, B578, B579, B580, B581, B582, B583, B584, B585, B586, B587, B588, B589, B590, B591, B592, B593, B594, B595, B596, B597, B598, B599, B600, B601, B602, B603, B604, B605, B606, B607, B608, B609, B610, B611, B612, B613, B614, B615, B616, B617, B618, B619, B620, B621, B622, B623, B624, B625, B626, B627, B628, B629, B630, B631, B632, B633, B634, B635, B636, B637, B638, B639, B640, B641, B642, B643, B644, B645, B646, B647, B648, B649, B650, B651, B652, B653, B654, B655, B656, B657, B658, B659, B660, B661, B662, B663, B664, B665, B666, B667, B668, B669, B670, B671, B672, B673, B674, B675, B676, B677, B678, B679, B680, B681, B682, B683, B684, B685, B686, B687, B688, B689, B690, B691, B692, B693, B694, B695, B696, B

LUMBER

N. L. G. A. RULES

CHORDS SIZE LUMBER

A - D 2x4 DRY No.2

D - G 2x4 DRY No.2

L - B 2x4 DRY No.2

H - F 2x4 DRY No.2

L - K 2x4 DRY No.2

K - J 2x4 DRY No.2

J - I 2x4 DRY No.2

I - H 2x4 DRY No.2

ALL WEBS 2x3 DRY No.2

EXCEPT

DRY: SEASONED LUMBER.

DESCR.

SPF

SPF

SPF

SPF

SPF

SPF

SPF

SPF

SPF

SPF

PLATES (table is in inches)

JT TYPE PLATES W LEN Y X

B TMVW+p MT20 4.0 6.0 2.00 2.00

C TMWW-t MT20 4.0 6.0 2.00 2.50

D TTW+p MT20 4.0 6.0

E TMWW-t MT20 4.0 6.0 2.00 2.50

F TMVW+p MT20 4.0 6.0 2.00 2.00

H BMV1+p MT20 2.0 4.0

I BBWW-I MT20 4.0 6.0 2.00 4.00

J BBWWW-p MT20 5.0 6.0 2.75 3.00

K BBWW-I MT20 4.0 6.0 2.00 4.00

L BMV1+p MT20 2.0 4.0

DESIGNER'S SEAL

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2

LICENSED PROFESSIONAL ENGINEER

Y. WIDYA

100225448

06/07/2022

PROVINCE OF ONTARIO

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

BEARINGS

FACTORED MAXIMUM FACTORED INPUT REQRD

GROSS REACTION GROSS REACTION BRG BRG

VERT HORZ DOWN HORZ UPLIFT IN-SX IN-SX

L 682 0 682 0 0 5-8 1-8

H 682 0 682 0 0 5-8 1-8

UNFACTORED REACTIONS

1ST LCASE MAX /MIN COMPONENT REACTIONS

JT COMBINED SNOW LIVE PERM.LIVE WIND DEAD SOIL

L 485 304 / 0 0 / 0 0 / 0 181 / 0 0 / 0

H 485 304 / 0 0 / 0 0 / 0 181 / 0 0 / 0

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

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 WEBS

MAX. FACTORED FACTORED MAX. FACTORED

MEMB. FORCE VERT. LOAD LC1 MAX MAX. MEMB. FORCE MAX

(LBS) (PLF) CSI (LC) UNBRAC (LBS) CSI (LC)

FR-TO FROM TO LENGTH FR-TO

A-B 0 / 28 -78.0 -78.0 0.05 (1) 10.00 J-D 0 / 415 0.09 (1)

B-C -396 / 0 -78.0 -78.0 0.10 (1) 6.25 J-E -12 / 0 0.00 (1)

C-D -423 / 0 -78.0 -78.0 0.12 (1) 6.25 I-E -283 / 0 0.15 (1)

D-E -423 / 0 -78.0 -78.0 0.12 (1) 6.25 C-J -12 / 0 0.00 (1)

E-F -396 / 0 -78.0 -78.0 0.10 (1) 6.25 K-C -283 / 0 0.15 (1)

F-G 0 / 28 -78.0 -78.0 0.05 (1) 10.00 B-K 0 / 309 0.07 (1)

L-B -656 / 0 0.0 0.0 0.08 (1) 7.81 I-F 0 / 309 0.07 (1)

H-F -656 / 0 0.0 0.0 0.08 (1) 7.81

L-K 0 / 0 -18.5 -18.5 0.04 (4) 10.00

K-J 0 / 300 -18.5 -18.5 0.09 (4) 10.00

J-I 0 / 300 -18.5 -18.5 0.09 (4) 10.00

I-H 0 / 0 -18.5 -18.5 0.04 (4) 10.00

DESIGN CRITERIA

SPECIFIED LOADS:

TOP CH. LL = 21.0 PSF

DL = 6.0 PSF

BOT CH. LL = 0.0 PSF

DL = 7.4 PSF

TOTAL LOAD = 34.4 PSF

SPACING = 24.0 IN.C/C

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

THIS DESIGN COMPLIES WITH:

- PART 9 OF BCBC 2018 , ABC 2019

- PART 9 OF OBC 2012 (2019 AMENDMENT)

- CSA 086-14

- TPIC 2014

(55 % OF 23.0 P.S.F. G.S.L PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (0.42")

CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")

ALLOWABLE DEFL.(TL)= L/360 (0.42")

CALCULATED VERT. DEFL.(TL) = L/ 999 (0.02")

CSI: TC=0.12/1.00 (C-D:1) , BC=0.09/1.00 (I-J:4) , WB=0.15/1.00 (E-I:1) , SSI=0.08/1.00 (D-E: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) (PLI) (PLI)

MAX MIN MAX MIN MAX MIN

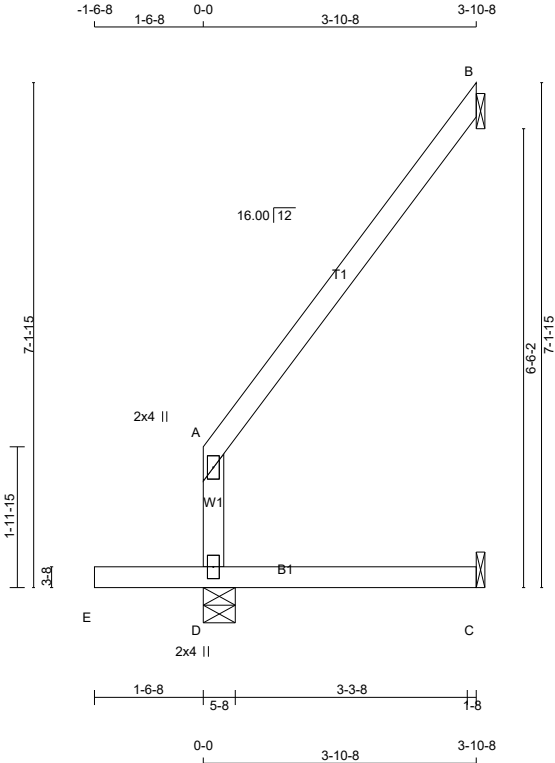
MT20 650 371 1747 788 1987 1873

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.47 (K) (INPUT = 0.90)

JSI METAL= 0.17 (F) (INPUT = 1.00)



TOTAL WEIGHT = 17 X 16 = 269 lb

LUMBER				
N. L. G. A. RULES				
CHORDS	SIZE		LUMBER	DESCR.
D - A	2x4	DRY	No.2	SPF
A - B	2x4	DRY	No.2	SPF
E - C	2x4	DRY	No.2	SPF
DRY: SEASONED LUMBER.				

PLATES (table is in inches)					
JT	TYPE	PLATES	W	LEN	Y X
A	TMV+p	MT20	2.0	4.0	
D	BMV1+p	MT20	2.0	4.0	

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

JT	FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG	
	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	
D	366	0	366	0	0	5-8	1-8	
B	129	0	129	0	0	1-8	1-8	
C	27	0	30	0	0	1-8	1-8	

SEE MITEK STANDARD DETAIL MSD2015-H FOR CONNECTION TO JOINT(S) B , C

UNFACTORED REACTIONS

JT	1ST LCASE COMBINED		MAX./MIN. COMPONENT REACTIONS				DEAD	SOIL
	SNOW	LIVE	PERM	LIVE	WIND			
D	261	158 / 0	0 / 0	0 / 0	0 / 0	104 / 0	0 / 0	0 / 0
B	90	70 / 0	0 / 0	0 / 0	0 / 0	20 / 0	0 / 0	0 / 0
C	22	0 / 0	0 / 0	0 / 0	0 / 0	22 / 0	0 / 0	0 / 0

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

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: (7)

C H O R D S				W E B S			
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. (PLF)	LOAD LC1 MAX CSI (LC)	MAX. UNBRAC LENGTH	MEMB. FR-TO	MAX. FACTORED FORCE (LBS)	MAX CSI (LC)
FR-TO		FROM	TO				
D- A	-173 / 0	0.0	0.0 0.11 (1)	7.81			
A- B	-17 / 0	-78.0	-78.0 0.15 (1)	6.25			
E- D	0 / 0	-96.5	-96.5 0.18 (7)	10.00			
D- C	0 / 0	-18.5	-18.5 0.08 (4)	10.00			

CANTILEVER ANALYSIS HAS BEEN CONSIDERED IN THIS DESIGN

PATTERN-LOADING CHECK APPLIED TO THIS TRUSS.

DESIGN CRITERIA

SPECIFIED LOADS:

TOP	CH.	LL	=	21.0	PSF
		DL	=	6.0	PSF
BOT	CH.	LL	=	0.0	PSF
		DL	=	7.4	PSF
TOTAL LOAD		=	34.4	PSF	

SPACING = 24.0 IN. C/C

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 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 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(TL)= L/360 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.00")

CANTILEVER DEFLECTION:
ALLOWABLE DEFL.(LL)= L/120 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")
ALLOWABLE DEFL.(TL)= L/120 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")

CSI: TC=0.15/1.00 (A-B:1) , BC=0.18/1.00 (D-E:7) ,
WB=0.00/1.00 (n/a:0) , SSI=0.14/1.00 (D-E:7)

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) (PSI)		SHEAR (PLI)		SECTION (PLI)	
		MAX	MIN	MAX	MIN	MAX	MIN
MT20		650	371	1747	788	1987	1873

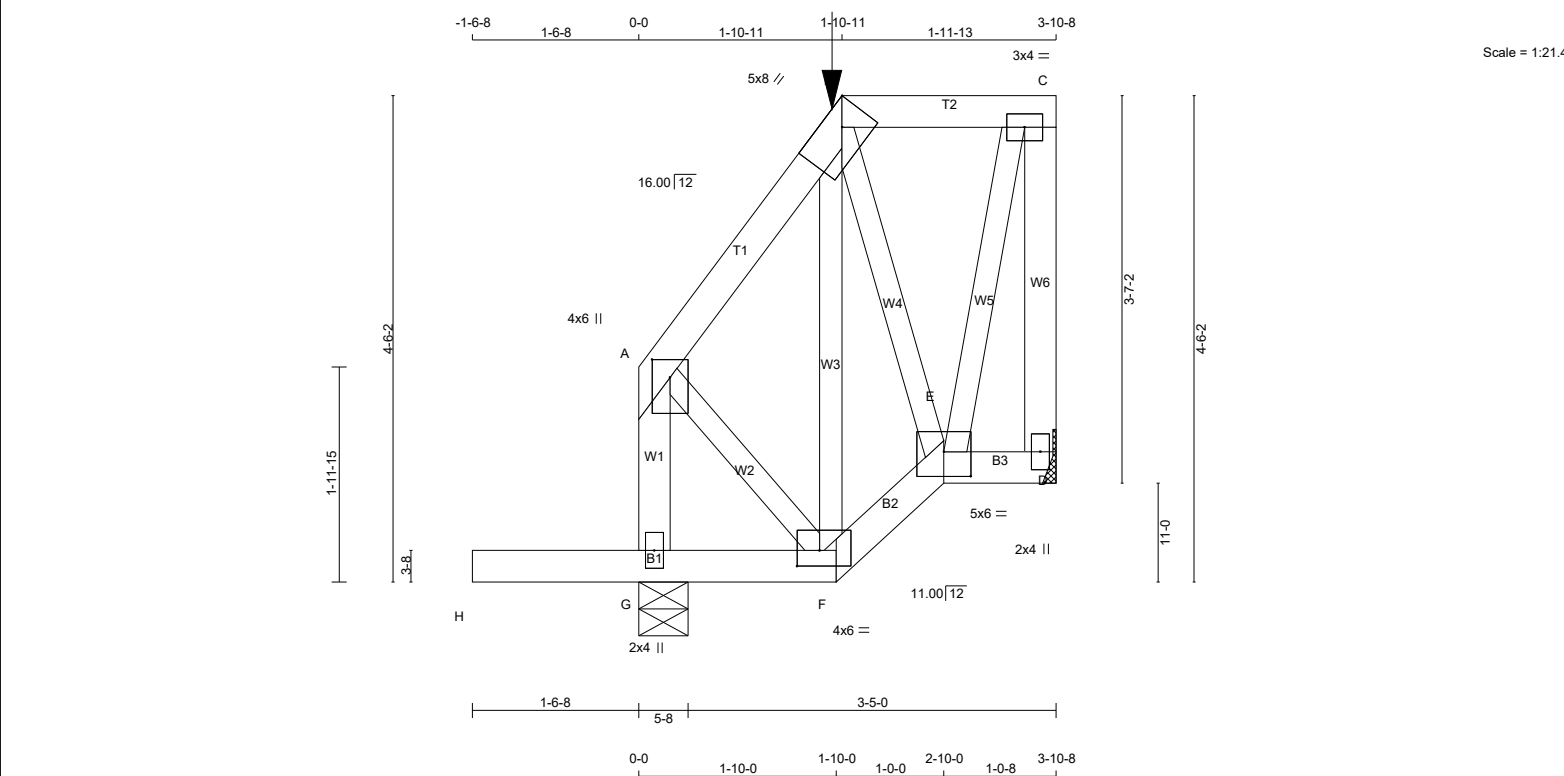
PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.15 (A) (INPUT = 0.90)
JSI METAL= 0.08 (A) (INPUT = 1.00)

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2





LUMBER					TOTAL WEIGHT = 28 lb				
N. L. G. A. RULES					[M]				
CHORDS	SIZE		LUMBER	DESCR.					
A - B	2x4	DRY	No.2	SPF					
B - C	2x4	DRY	No.2	SPF					
D - C	2x4	DRY	No.2	SPF					
G - A	2x4	DRY	No.2	SPF					
H - F	2x4	DRY	No.2	SPF					
F - E	2x4	DRY	No.2	SPF					
E - D	2x4	DRY	No.2	SPF					
ALL WEBS EXCEPT	2x3	DRY	No.2	SPF					
DRY: SEASONED LUMBER.									

PLATES (table is in inches)						
JT	TYPE	PLATES	W	LEN	Y	X
A	TMVW+p	MT20	4.0	6.0	2.00	2.00
B	TTWW-h	MT20	5.0	8.0	Edge	2.75
C	TMVW-t	MT20	3.0	4.0		
D	BMV1+p	MT20	2.0	4.0		
E	BBWW-l	MT20	5.0	6.0	2.75	3.00
F	BBWW-l	MT20	4.0	6.0	1.75	2.50
G	BMV1+p	MT20	2.0	4.0		

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

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

JT	FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG	
	VERT	HORZ	DOWN	HORZ	IN-SX	IN-SX	IN-SX	IN-SX
D	248	0	268	0	0	MECHANICAL		
G	425	0	425	0	0	5-8	1-8	

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

UNFACTORED REACTIONS

JT	1ST LCASE COMBINED		MAX./MIN. SNOW		MIN. LIVE		PERM.LIVE		WIND		DEAD		SOIL	
	VERT	HORZ	DOWN	HORZ	DOWN	HORZ	DOWN	HORZ	DOWN	HORZ	DOWN	HORZ	DOWN	HORZ
D	177		122 / -13		0 / 0		0 / 0		0 / 0		68 / 0		0 / 0	
G	304		183 / 0		0 / 0		0 / 0		0 / 0		121 / 0		0 / 0	

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

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: (7)

CHORDS					WEBS				
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	LC1 MAX	MAX	MEMB.	MAX. FACTORED FORCE (LBS)	MAX	LC1	MAX
FR-TO		FROM TO		CSI (LC)	FR-TO				
A-B	-105 / 0	-78.0	-78.0	0.05 (6)	6.25	F-B	-120 / 0	0.03 (1)	
B-C	-46 / 0	-111.3	-111.3	0.08 (6)	6.25	B-E	-62 / 8	0.01 (6)	
D-C	-254 / 0	0.0	0.0	0.05 (6)	7.81	E-C	0 / 152	0.04 (6)	
G-A	-211 / 0	0.0	0.0	0.03 (6)	7.81	A-F	0 / 82	0.02 (6)	
H-G	0 / 0	-96.5	-96.5	0.22 (7)	10.00				
G-F	0 / 0	-26.4	-26.4	0.22 (7)	10.00				
F-E	0 / 86	-26.4	-26.4	0.02 (6)	10.00				
E-D	0 / 0	-26.4	-26.4	0.01 (4)	10.00				

FACTORED CONCENTRATED LOADS (LBS)									
JT	LOC.	LC1	MAX-	MAX+	FACE	DIR.	TYPE	HEEL	CONN.
B	1-10-11	-54	-54	---	FRONT	VERT	TOTAL	---	C1

CONNECTION REQUIREMENTS

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

CANTILEVER ANALYSIS HAS BEEN CONSIDERED IN THIS DESIGN

PATTERN-LOADING CHECK APPLIED TO THIS TRUSS.

DESIGN CRITERIA

SPECIFIED LOADS:

TOP	CH.	LL	=	21.0	PSF
		DL	=	6.0	PSF
BOT	CH.	LL	=	0.0	PSF
		DL	=	7.4	PSF
TOTAL LOAD		=	34.4	PSF	

SPACING = 24.0 IN. C/C

LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM

GIRDER TYPE: CPrimeHip
LEFT SETBACK = 1-10-11
RIGHT SETBACK = 0-0
END SETBACK = 3-8-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDT'L LOADS BASED ON 55 % OF GSL.

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 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 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.00")
ALLOWABLE DEFL.(TL)= L/360 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.00")

CANTILEVER DEFLECTION:
ALLOWABLE DEFL.(LL)= L/120 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.02")
ALLOWABLE DEFL.(TL)= L/120 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 555 (0.03")

CSI: TC=0.08/1.00 (B-C:6) , BC=0.22/1.00 (F-G:7) , WB=0.04/1.00 (C-E:6) , SSI=0.16/1.00 (G-H:7)

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

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) (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= 0.31 (C) (INPUT = 0.90)
JSI METAL= 0.06 (E) (INPUT = 1.00)

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2

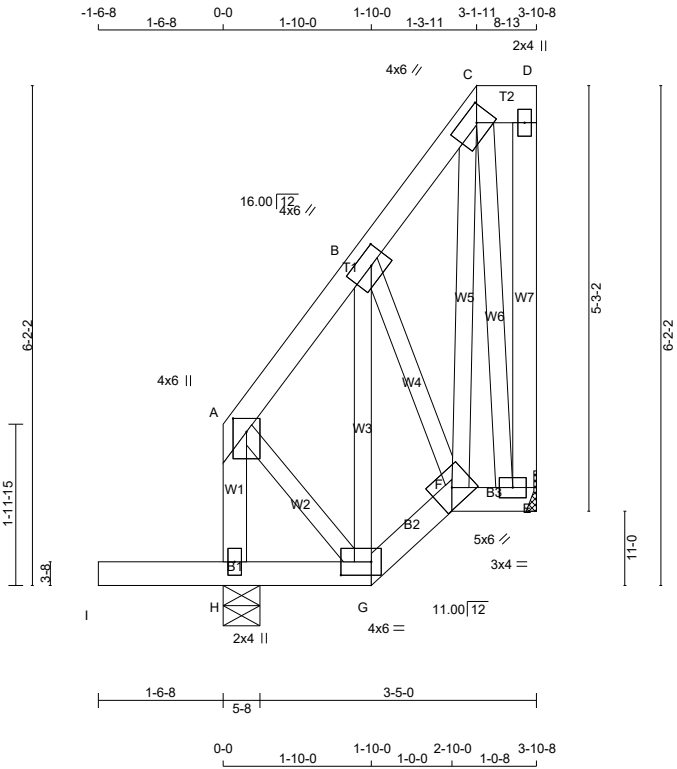


JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
292614K	J1TB		1	TRUSS DESC. JT 45147	E22052674

Alpa Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 7 14:56:02 2022 Page 1

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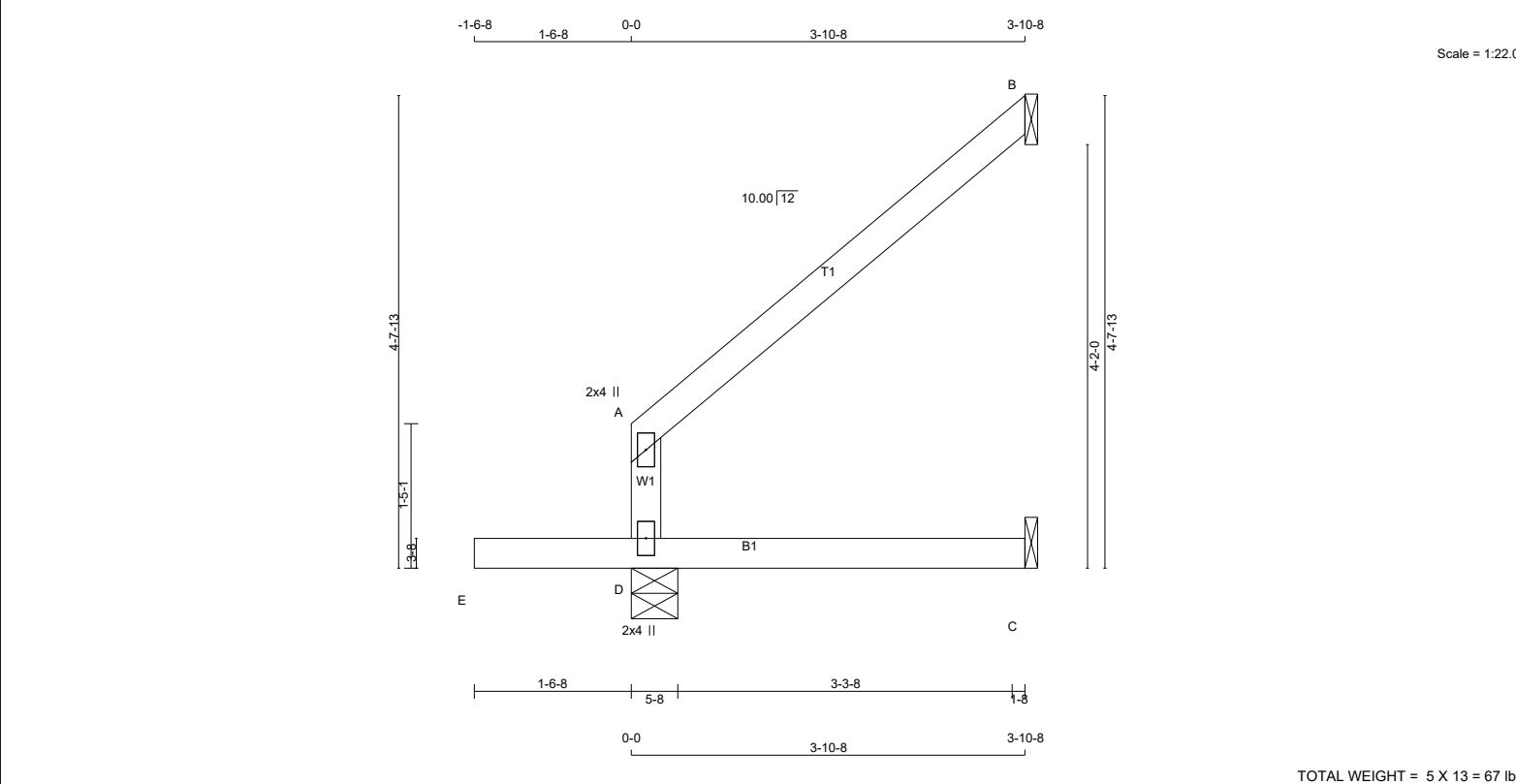


TOTAL WEIGHT = 36 lb

LUMBER										DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER										DESIGN CRITERIA																			
N. L. G. A. RULES																																							
CHORDS					SIZE					LUMBER					DESCR.																								
A - C					2x4					DRY					No.2					SPF					SPECIFIED LOADS:														
C - D					2x6					DRY					No.2					SPF					TOP CH. LL = 21.0 PSF														
E - D					2x4					DRY					No.2					SPF					DL = 6.0 PSF														
H - A					2x4					DRY					No.2					SPF					BOT CH. LL = 0.0 PSF														
I - G					2x4					DRY					No.2					SPF					DL = 7.4 PSF														
G - F					2x4					DRY					No.2					SPF					TOTAL LOAD = 34.4 PSF														
F - E					2x4					DRY					No.2					SPF					SPACING = 24.0 IN. C/C														
ALL WEBS EXCEPT										2x3					DRY					No.2					SPF					LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM									
DRY: SEASONED LUMBER.																																							
PLATES (table is in inches)																				THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 2015																			
JT		TYPE		PLATES		W		LEN		Y		X																											
A		TMVW+p		MT20		4.0		6.0		2.00		2.00																											
B		TMWW-t		MT20		4.0		6.0		2.00		2.50																											
C		TTWW-h		MT20		4.0		6.0		2.00		2.25																											
D		TMV+p		MT20		2.0		4.0																															
E		BMVW1-t		MT20		3.0		4.0																															
F		BBWW-h		MT20		5.0		6.0																															
G		BBWW-l		MT20		4.0		6.0		2.00		4.50																											
H		BMV1+p		MT20		2.0		4.0																															
										BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) H																													
										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: (7)																													
										C H O R D S										W E B S																			
										MEMB. MAX. FACTORED FORCE (LBS)										MEMB. MAX. FACTORED FORCE (LBS)																			
										FACTORED VERT. LOAD (PLF)										FACTORED MAX. UNBRAC LENGTH																			
										LC1 MAX CSI (LC)										FR-TO																			
										FROM TO										FR-TO																			
										A- B -69 / 6										G- B -100 / 0																			
										B- C -58 / 0										B- F -49 / 13																			
										C- D 0 / 0										F- C -2 / 107																			
										E- D -29 / 0										C- E -140 / 0																			
										H- A -159 / 0										A- G -4 / 62																			
										I- H 0 / 0																													
										H- G 0 / 0																													
										G- F -5 / 61																													
										F- E 0 / 21																													
										CANTILEVER ANALYSIS HAS BEEN CONSIDERED IN THIS DESIGN																													
										PATTERN-LOADING CHECK APPLIED TO THIS TRUSS.																													
																				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= 0.14 (C) (INPUT = 0.90)																			
																				JSI METAL= 0.04 (G) (INPUT = 1.00)																			

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2





TOTAL WEIGHT = 5 X 13 = 67 lb

LUMBER					
N. L. G. A. RULES					
CHORDS	SIZE		LUMBER	DESCR.	
D - A	2x4	DRY	No.2	SPF	
A - B	2x4	DRY	No.2	SPF	
E - C	2x4	DRY	No.2	SPF	

DRY: SEASONED LUMBER.

PLATES (table is in inches)					
JT	TYPE	PLATES	W	LEN	Y X
A	TMV+p	MT20	2.0	4.0	
D	BMV1+p	MT20	2.0	4.0	

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

JT	FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG	
	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	
D	367	0	367	0	0	5-8	1-8	
B	128	0	128	0	0	1-8	1-8	
C	27	0	30	0	0	1-8	1-8	

SEE MITEK STANDARD DETAIL MSD2015-H FOR CONNECTION TO JOINT(S) B , C

UNFACTORED REACTIONS

JT	1ST LCASE		MAX./MIN. COMPONENT REACTIONS					SOIL
	COMBINED		SNOW	LIVE	PERM.LIVE	WIND	DEAD	
D	262		158 / 0	0 / 0	0 / 0	0 / 0	104 / 0	0 / 0
B	89		69 / 0	0 / 0	0 / 0	0 / 0	20 / 0	0 / 0
C	22		0 / 0	0 / 0	0 / 0	0 / 0	22 / 0	0 / 0

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

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: (7)

MEMB.		CHORDS		FACTORED		WEBS		FACTORED	
		MAX. FORCE (LBS)	VERT. (PLF)	LOAD LC1	MAX CSI (LC)	MAX. UNBRAC LENGTH	MEMB. FR-TO	MAX. FORCE (LBS)	MAX CSI (LC)
D-A	-174 / 0		0.0	0.0	0.12 (1)	7.81			
A-B	-15 / 0		-78.0	-78.0	0.14 (1)	6.25			
E-D	0 / 0		-96.5	-96.5	0.18 (7)	10.00			
D-C	0 / 0		-18.5	-18.5	0.08 (4)	10.00			

CANTILEVER ANALYSIS HAS BEEN CONSIDERED IN THIS DESIGN

PATTERN-LOADING CHECK APPLIED TO THIS TRUSS.

DESIGN CRITERIA

SPECIFIED LOADS:

TOP	CH.	LL	=	21.0	PSF
		DL	=	6.0	PSF
BOT	CH.	LL	=	0.0	PSF
		DL	=	7.4	PSF
TOTAL LOAD		=	34.4	PSF	

SPACING = 24.0 IN. C/C

THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 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 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) EQUALS 21.0 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(TL)= L/360 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.00")

CANTILEVER DEFLECTION:
ALLOWABLE DEFL.(LL)= L/120 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")
ALLOWABLE DEFL.(TL)= L/120 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")

CSI: TC=0.14/1.00 (A-B:1) , BC=0.18/1.00 (D-E:7) ,
WB=0.00/1.00 (n/a:0) , SSI=0.14/1.00 (D-E:7)

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)	(PSI)	(PLI)	(PSI)	(PLI)
		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= 0.12 (A) (INPUT = 0.90)
JSI METAL= 0.09 (A) (INPUT = 1.00)

LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2



LUS – Double Shear Joist Hangers



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:

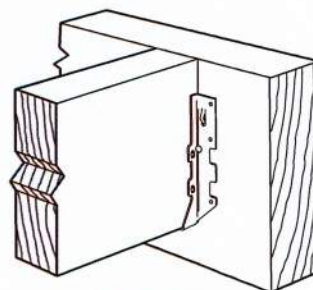
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

Installation:

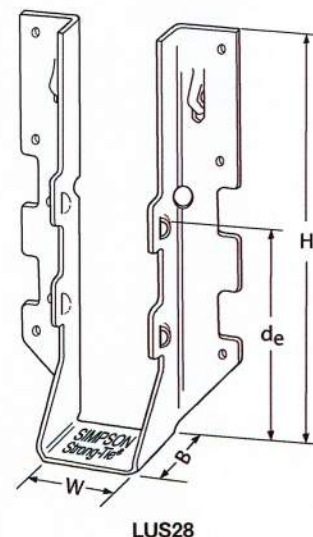
- Use all specified fasteners.
- Nails: 16d = 0.162" dia. x 3½" long common wire, 10d = 0.148" x 3" long common wire.
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.

Options:

- These hangers cannot be modified



Typical LUS Installation



LUS28

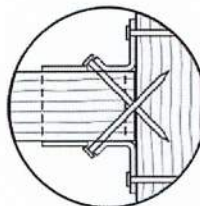
Model No.	Ga.	Dimensions (in.)				Fasteners		Factored Resistance (lb.)			
		W	H	B	d _e ¹	Face	Joist	D.Fir-L		S-P-F	
								Uplift (K _o =1.15)	Normal (K _o =1.00)	Uplift (K _o =1.15)	Normal (K _o =1.00)
LUS24	18	1½	3½	1¾	1½	(4) 10d	(2) 10d	710	1630	645	1155
LUS24-2	18	3½	3½	2	1½	(4) 16d	(2) 16d	835	2020	590	1435
LUS26	18	1½	4¾	1¾	3½	(4) 10d	(4) 10d	1420	2170	1290	1630
LUS26-2	18	3½	4¾	2	4	(4) 16d	(4) 16d	1720	2595	1545	1920
LUS26-3	18	4½	4¾	2	3¼	(4) 16d	(4) 16d	1720	2595	1545	2340
LUS28	18	1½	6½	1¾	3¾	(6) 10d	(6) 10d	1420	2520	1290	1790
LUS28-2	18	3½	7	2	4	(6) 16d	(4) 16d	1720	3325	1545	2575
LUS28-3	18	4½	6¼	2	3¼	(6) 16d	(4) 16d	1720	3325	1545	2375
LUS210	18	1½	7½	1¾	3¾	(8) 10d	(4) 10d	1420	2785	1290	2210
LUS210-2	18	3½	9	2	6	(8) 16d	(6) 16d	2580	4500	2320	3195
LUS210-3	18	4½	8¾	2	5¼	(8) 16d	(6) 16d	2580	3345	2320	2375

1. d_e 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.

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T-SPECLUS20 3/20 exp. 6/22

(800) 999-5099
strongtie.com

HUS/LJS – Double Shear Joist Hangers

SIMPSON
Strong-Tie®

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:

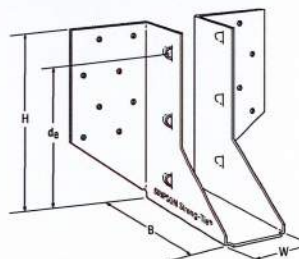
- Factored resistances are in accordance with CSA O86 -14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

Installation:

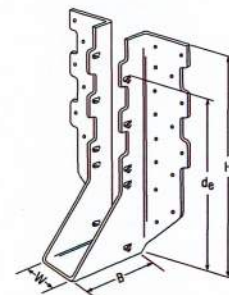
- Use all specified fasteners
- Nails: 16d = 0.162" dia. x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

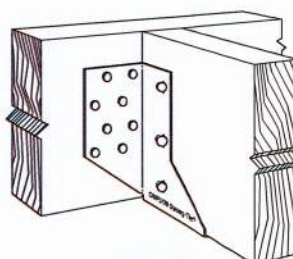
- See current catalogue for options



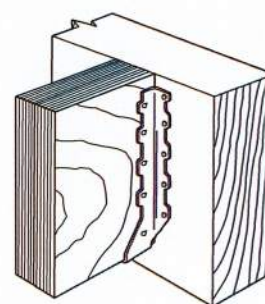
LJS26DS



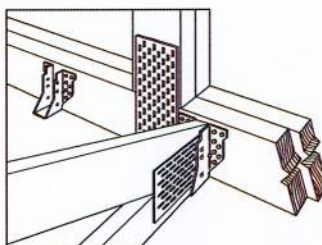
HUS210
(HUS26, HUS28, similar)



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 _e ¹	Face	Joist		D.Fir-L		S-P-F	
									Uplift (K ₀ =1.15) lb.	Normal (K ₀ =1.00) lb.	Uplift (K ₀ =1.15) lb.	Normal (K ₀ =1.00) lb.
LJS26DS	18	1½	5	3½	4%	(16) 16d	(6) 16d		2055	4265	1460	4115
HUS26	16	1½	5½	3	3½	(14) 16d	(6) 16d		2705	4940	2065	3875
HUS28	16	1½	7½	3	6¾	(22) 16d	(8) 16d		3605	5365	2675	4345
HUS210	16	1½	9¾	3	7¾	(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_e is the distance from the seat of the hanger to the highest joist nail.

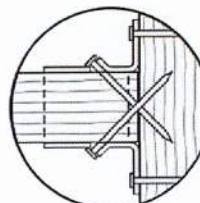


Dome Double Shear Nailing prevents tabs breaking off (available on some models).

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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T-SPECHUS20 3/20 exp. 6/22

(800) 999-5099
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HHUS – Double Shear Joist Hangers

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:

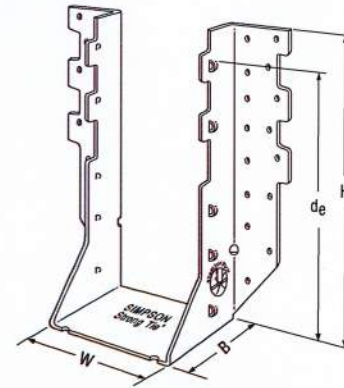
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

Installation:

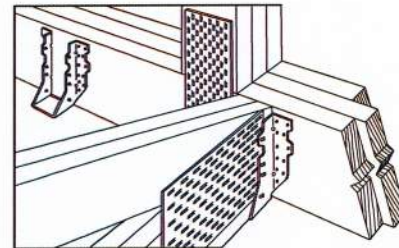
- Use all specified fasteners
- Nails: 16d = 0.162" dia. x 3 1/2" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

- See current catalogue for options



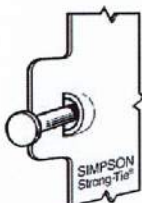
HHUS410



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

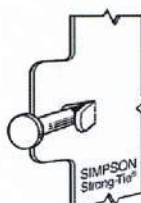
Model No.	Ga.	Dimensions (in.)				Fasteners		Factored Resistance (lb.)			
		W	H	B	d _e ¹	Face	Joist	D.Fir-L		S-P-F	
								Uplift (K ₀ =1.15)	Normal (K ₀ =1.00)	Uplift (K ₀ =1.15)	Normal (K ₀ =1.00)
HHUS26-2	14	3 1/16	5 13/16	3	3 15/16	(14) 16d	(6) 16d	2850	7335	2065	5205
HHUS28-2	14	3 1/16	7 1/32	3	6 5/32	(22) 16d	(8) 16d	3765	8940	2675	6345
HHUS210-2	14	3 1/16	9 3/32	3	8	(30) 16d	(10) 16d	4670	9660	4235	7000
HHUS210-3	14	4 11/16	9	3	7 15/16	(30) 16d	(10) 16d	4670	9670	4235	6865
HHUS210-4	14	6 1/8	8 29/32	3	7 27/32	(30) 16d	(10) 16d	4670	10155	4235	7210
HHUS46	14	3 3/8	5 13/32	3	3 15/16	(14) 16d	(6) 16d	2540	7335	2065	5205
HHUS48	14	3 3/8	7 1/8	3	6 1/8	(22) 16d	(8) 16d	3765	8940	2675	6345
HHUS410	14	3 3/8	9	3	8	(30) 16d	(10) 16d	4670	9855	4235	7000
HHUS5.50/10	14	5 1/2	9	3	8	(30) 16d	(10) 16d	4670	10155	4235	7210
HHUS7.25/10	14	7 1/4	9	3 3/16	7 29/32	(30) 16d	(10) 16d	4670	10155	3370	7210

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

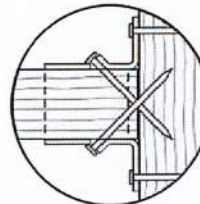


Dome Double Shear Nailing prevents tabs breaking off (available on some models).

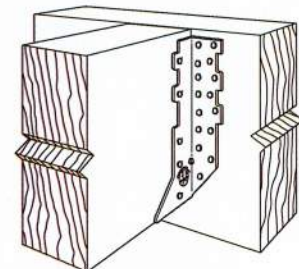
U.S. Patent 5,603,580



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



Double Shear Nailing Top View.



Typical HHUS Installation



LIMIT
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DESIGN

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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:

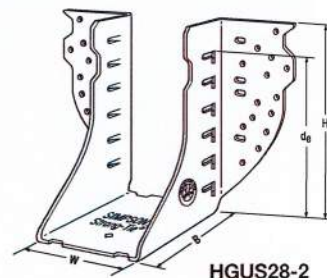
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%.
No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

Installation:

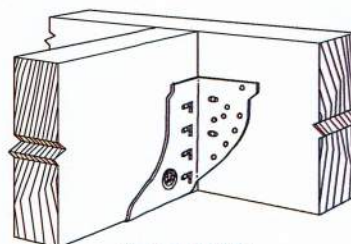
- Use all specified fasteners
- Nails: 16d = 0.162" dia x 3 1/2" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

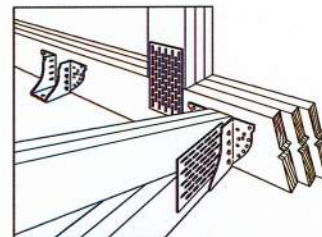
- See current catalogue for options



HGUS28-2



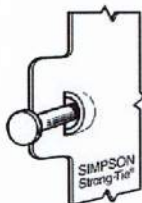
Typical HGUS
Installation



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

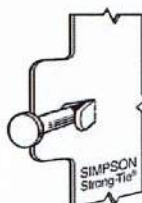
Model No.	Ga.	Dimensions (in.)				Fasteners		Factored Resistance (lb.)			
		W	H	B	d _g ¹	Face	Joist	D.Fir-L		S-P-F	
								Uplift (K ₀ =1.15)	Normal (K ₀ =1.00)	Uplift (K ₀ =1.15)	Normal (K ₀ =1.00)
HGUS26	12	1 5/8	5 3/8	5	4 3/32	(20) 16d	(8) 16d	2685	6625	2685	5700
HGUS26-2	12	3 5/16	5 7/16	4	4 1/8	(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 1/16	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 5/16	7 3/16	4	6 1/8	(36) 16d	(12) 16d	6070	12980	4310	9215
HGUS28-3	12	4 15/16	7 1/4	4	6 3/8	(36) 16d	(12) 16d	6070	12980	4310	9215
HGUS28-4	12	6 1/16	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 5/16	9 3/16	4	8 1/8	(46) 16d	(16) 16d	6840	14015	4855	10270
HGUS210-3	12	4 15/16	9 1/4	4	8 3/8	(46) 16d	(16) 16d	6840	14645	4855	10400
HGUS210-4	12	6 1/16	9 3/16	4	8 1/8	(46) 16d	(16) 16d	6840	14645	4855	10400
HGUS212-4	12	6 1/16	10 3/8	4	10 1/8	(56) 16d	(20) 16d	7640	14995	5425	10645
HGUS214-4	12	6 1/16	12 3/8	4	11 1/8	(66) 16d	(22) 16d	10130	16400	7195	11645

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

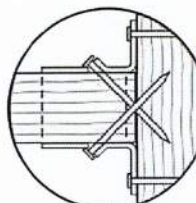


Dome Double
Shear Nailing
prevents tabs
breaking off
(available on
some models).

U.S. Patent
5,603,580



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



Double
Shear
Nailing
Top View.



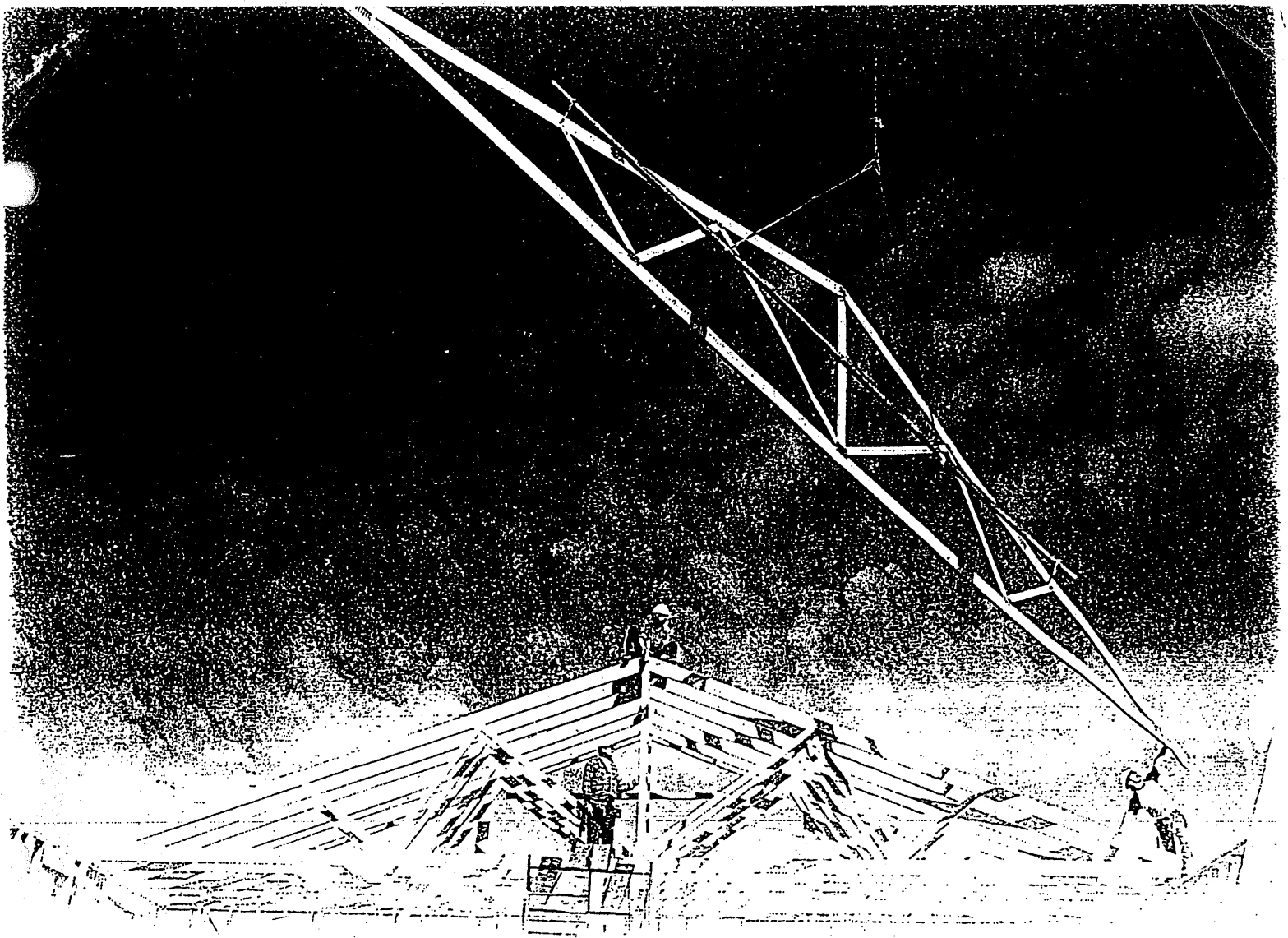
LIMIT
STATES
DESIGN

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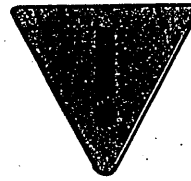
Wood Truss Installation

**A Guide to proper handling, erecting and bracing
metal plate connected wood trusses**

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1 Unloading & Lifting.....	5
2 Job Site Handling.....	5
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Warning



General

Familiarity with the Construction Design Documents, the Truss Design Drawings, and Truss Placement Plans (if required by the Construction Design Documents) is required to properly erect, brace, and connect the trusses to the building system.

All of the care and quality involved in the design and manufacture of wood trusses can be jeopardized if the trusses are not properly handled, erected, and braced.

The consequences of improper handling, erecting, and bracing may be a collapse of the structure, which at best is a substantial loss of time and materials, and at worst is a loss of life. The majority of truss accidents occur during truss installation and not as a result of improper design or manufacture.

Prior to truss erection, the builder/erector shall meet with the erection crew for a safety and planning meeting, making sure each crew member understands his or her roles and responsibilities during the erection process.

Temporary Erection Bracing

Trusses are not marked in any way to identify the frequency, or location of temporary erection bracing.

All temporary bracing shall comply with the latest edition of *Commentary and Recommendations for Handling, Installing & Bracing Metal Plate Connected Wood Trusses* (HIB), published by the Truss Plate Institute, and/or as specified in the Construction Design Documents prepared by the building designer.

Permanent Truss Bracing

Permanent bracing for the roof or floor trusses is the responsibility of the building designer and should be shown on the Construction Design Documents. Permanent bracing locations for individual compression members of a wood truss are shown on the Truss Design Drawings, and shall be installed by the building or erection contractor. This bracing is needed for the proper performance of individual trusses within the roof or floor system. The design and connection of the bracing to the truss and then to the overall building system is the responsibility of the building designer, and is in addition to the permanent bracing plan, which is also specified by the building designer.

Special Design Requirements

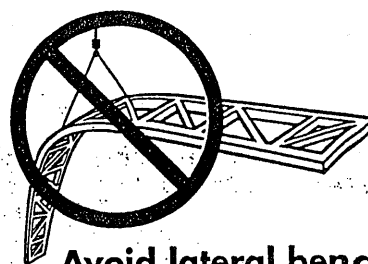
Special design requirements, such as wind bracing, portal bracing, seismic bracing, diaphragms, shear walls, or other load transfer elements and their connections to wood trusses must be considered separately by the building designer, who shall determine size, location, and method of connections for all bracing as needed to resist these forces.

1

Unloading & Lifting

Never handle trusses flat

Beginning with the unloading process, and throughout all phases of construction, care must be taken to avoid lateral bending of trusses, which can cause damage to the lumber and metal connector plates at the joints.

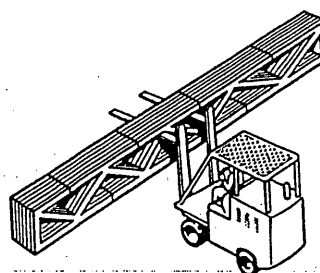
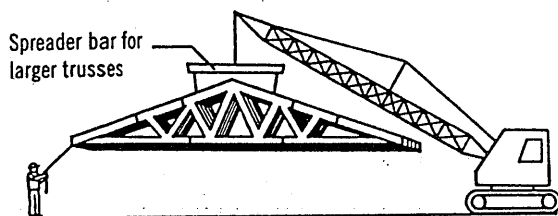


Avoid lateral bending

- Use special care in windy weather.
- If using a crane within 10 feet of an electric line, contact the local power company.
- If using a crane within 5 miles of an airport, contact the airport 30 days prior to erection to learn about any safety regulations that must be followed.

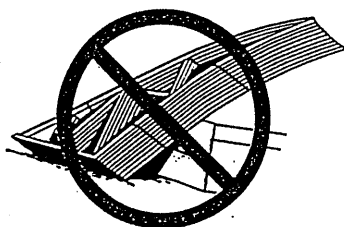
2

Job Site Handling



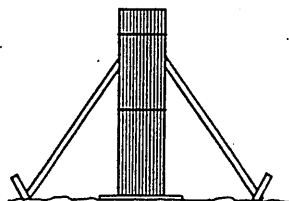
All trusses should be picked up at the top chords in a vertical position only

Proper banding and smooth ground allow for unloading of trusses without damage. This should be done as close to the building site as possible to minimize handling. Do not break banding until installation begins. Hand erection of trusses is allowed, provided excessive lateral bending is prevented.



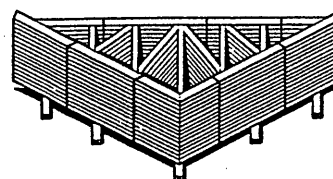
Do not store unbraced bundles upright

If trusses are stored vertically they shall be braced in a manner that will prevent tipping or topping. Generally cutting of the banding is done just prior to installation.



Do not store on uneven ground

If trusses are stored horizontally, blocking should be used on eight to ten foot centers, or as required, to minimize lateral bending and moisture gain.

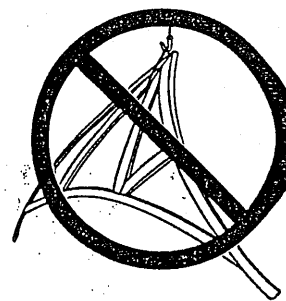


Care should be exercised when removing banding to avoid damaging trusses.

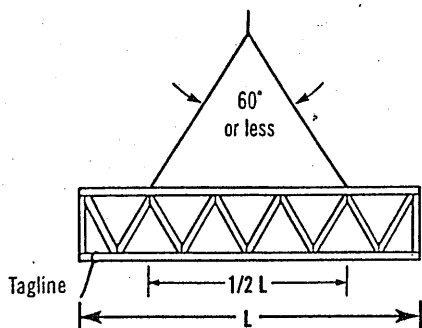
During long term storage, trusses shall be protected from the environment in a manner that provides for adequate ventilation of the trusses. If tarpaulins or other material is used, the ends shall be left open for ventilation. Plastic is not recommended, since it can trap moisture.

3 Hoisting

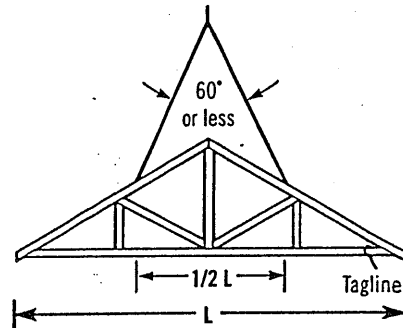
All trusses that are erected one at a time shall be held safely in position by the erection equipment until such time as all necessary bracing has been installed and the ends of the trusses are securely fastened to the building.



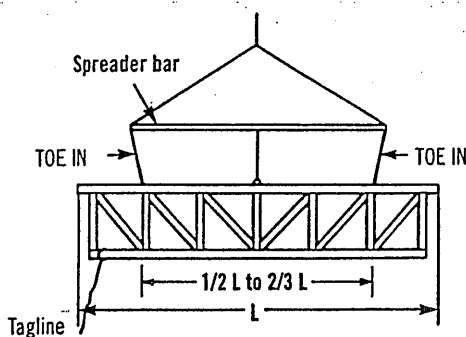
Avoid lateral bending



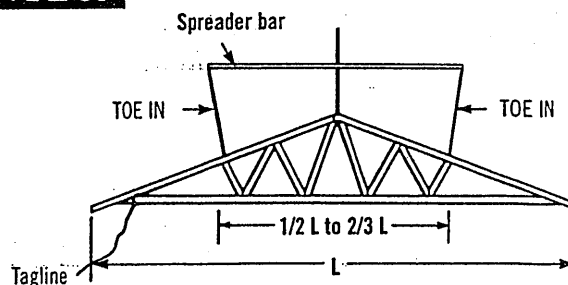
$L \leq 30'$



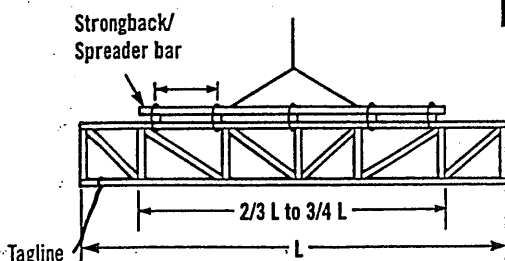
Truss sling is acceptable where these criteria are met.



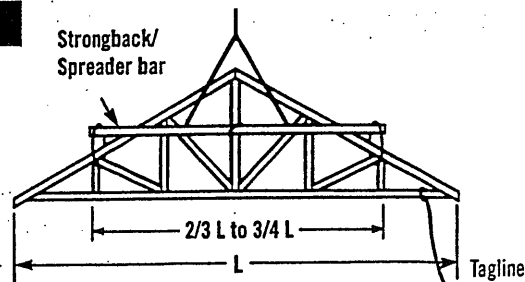
$30' < L \leq 60'$



Use spreader bar in all other cases. It should be noted that the lines from the ends of the spreader bar "TOE IN"; if these lines should "TOE OUT" the truss may fold in half.



$L > 60'$



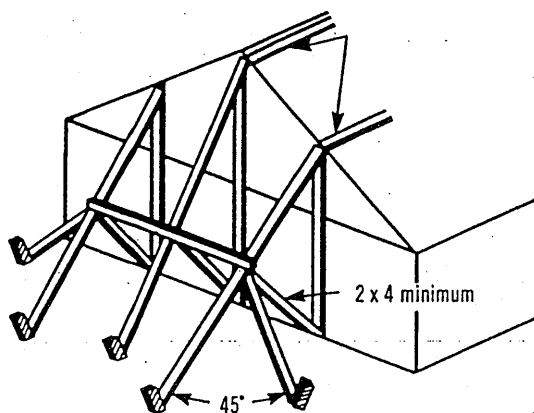
For lifting trusses with spans in excess of 60 feet, it is recommended that a strongback/spreader bar be used as illustrated. The strongback/spreader bar should be attached to the top chord and web members at intervals of approximately 10 feet. Further, the strongback/spreader bar should be at or above the mid-height of the truss to prevent overturning. The strongback/spreader bar can be of any material with sufficient strength to safely carry the weight of the truss and sufficient rigidity to adequately resist bending of the truss.

4 Beginning the Erection Process

It is important for the builder or erection contractor to provide substantial bracing for the first truss erected. The two or more trusses making up the rest of the first set are tied to and rely upon the first truss for stability. Likewise, after this first set of trusses is adequately cross-braced, the remaining trusses installed rely upon this first set for stability. Thus, the performance of the truss bracing system depends to a great extent on how well the first group of trusses is braced.

Ground Brace - Exterior

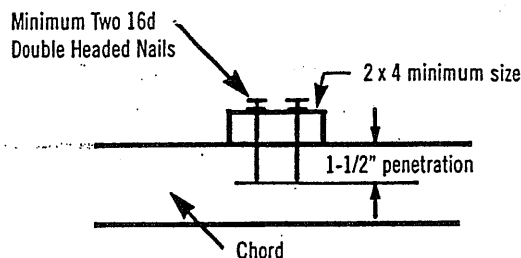
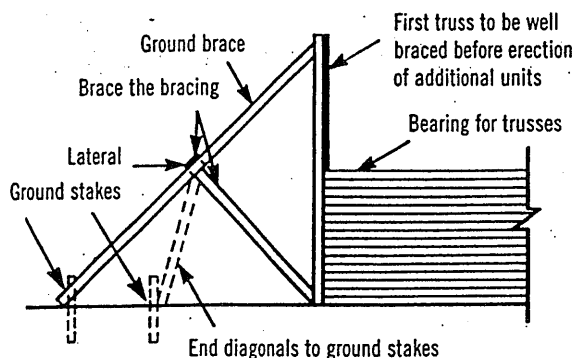
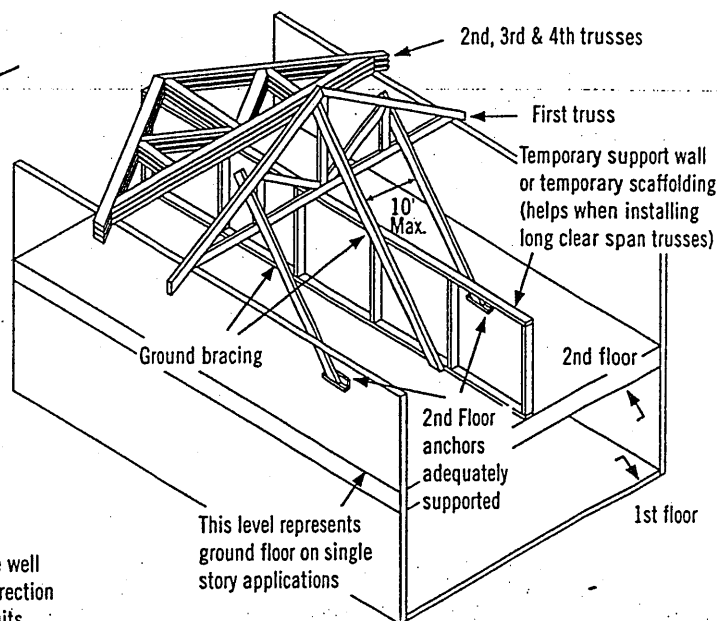
One satisfactory method ties the first unit of trusses off to a series of braces that are attached to a stake driven into the ground and securely anchored. The ground brace itself should be supported as shown below or it is apt to buckle. Additional ground braces in the opposite direction, inside the building, are also recommended.



Note: Locate ground braces for first truss directly in line with all rows of top chord continuous lateral bracing (either temporary or permanent).

Ground Brace - Interior

Another satisfactory method where height of building or ground conditions prohibit bracing from the exterior is to tie the first truss rigidly in place from the interior at the floor level, provided the floor is substantially completed and capable of supporting the ground bracing forces. Securely fasten the first truss to the middle of the building. Brace the bracing similar to exterior ground bracing shown at left. Set trusses from the middle toward the end of the building. Properly cross-brace the first set of trusses before removing floor braces and setting remaining trusses.

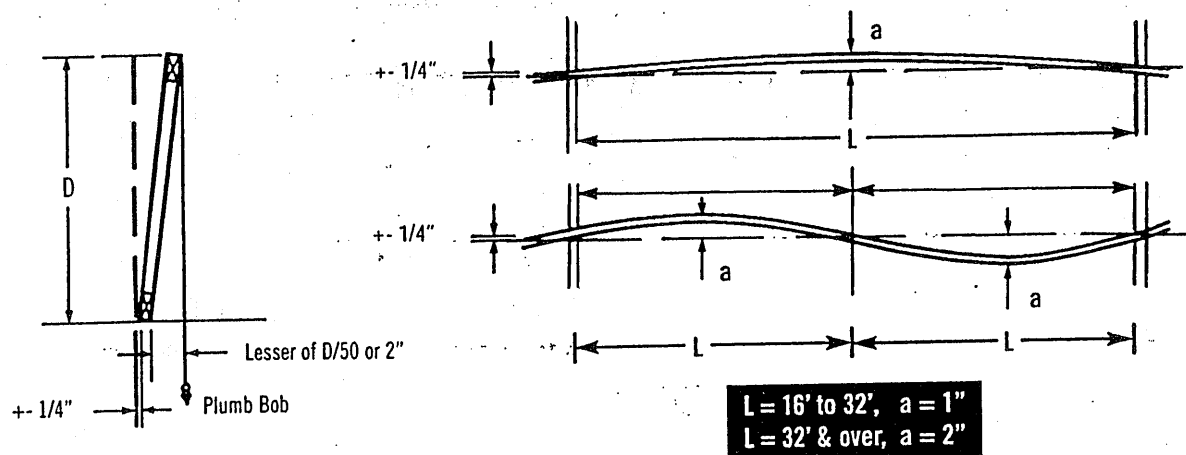


Inadequate size of bracing material or inadequate fastening is a major cause of erection dominoing.

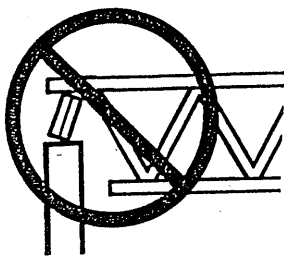
5 Erection Tolerance

Complying with erection tolerances is critical to achieving an acceptable roof or floor line, and to accomplishing effective bracing. Setting trusses within tolerance the first time will prevent the need for the hazardous practice of respacing or adjusting trusses when roof sheathing or roof purlins are installed. Trusses leaning or bowing can cause nails to miss the top chords when sheathing is applied, and create cumulative stresses on the bracing, which is a frequent cause of dominoing.

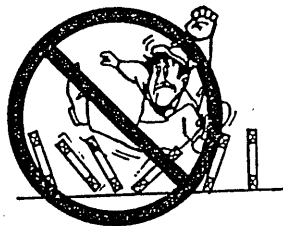
When sheathing, make sure nails are driven into the top chord of the trusses.



6 Bracing



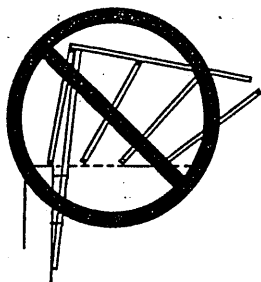
Do not install trusses on temporarily connected supports



Do not walk on unbraced trusses



Do not walk on trusses or gable ends lying flat

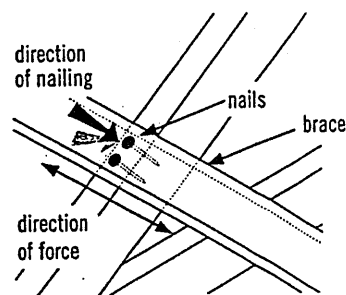


Nails in withdrawal (parallel to force)

All anchors, hangers, tie-downs, seats, bearing ledgers, etc., that are part of the supporting structure shall be accurately and properly placed and permanently attached before truss installation begins. No trusses shall ever be installed on anchors or ties that have temporary connections to the supporting structure.

Nailing scabs to the end of the building to brace the first truss is not recommended.

All nailing of bracing should be done so that nails are driven perpendicular to the direction of force, as shown at right.



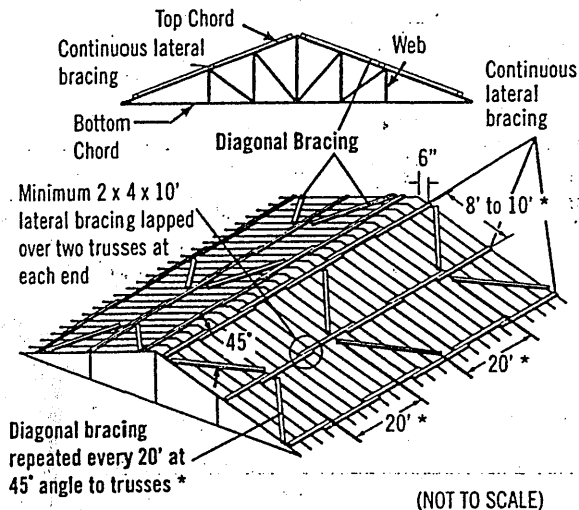
Well nailed (perpendicular to force)

7 Bracing Requirements for 3 Planes of Roof

Temporary erection bracing must be applied to three planes of the roof system to ensure stability: Plane 1) Top Chord (sheathing), Plane 2) Bottom Chord (ceiling plane), and Plane 3) Web Member plane or vertical plane perpendicular to trusses.

1) Top Chord Plane

Most important to the builder or erection contractor is bracing in the plane of the top chord. Truss top chords are susceptible to lateral buckling before they are braced or sheathed.

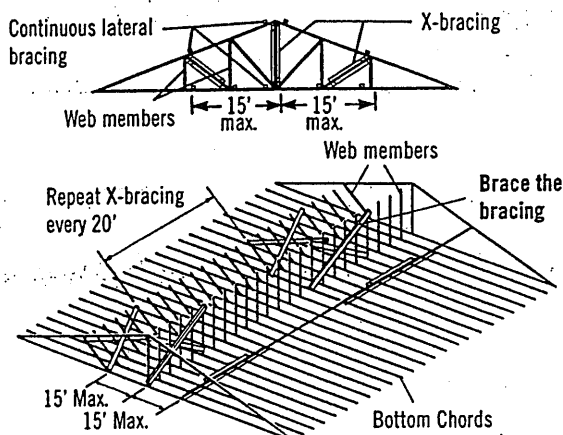


Exact spacing between trusses should be maintained as bracing is installed to avoid the hazardous practice of removing bracing to adjust spacing. This act of "adjusting spacing" can cause trusses to topple if connections are removed at the wrong time.

3) Web Member Plane

"X" bracing, as shown, is critical in preventing trusses from leaning or dominoing. Repeat as shown to create a succession of rigid units.

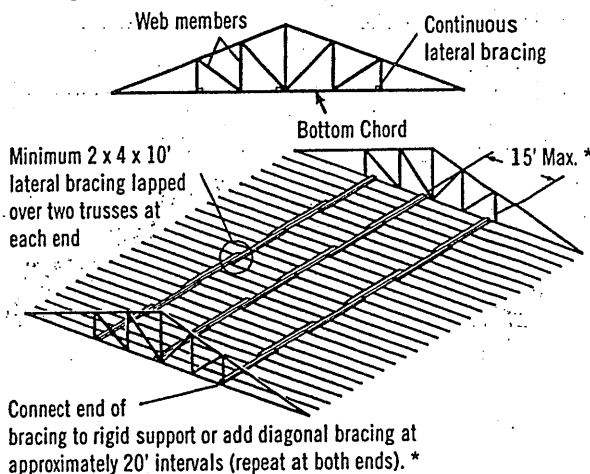
X-bracing should be installed on vertical web members wherever possible, at or near lateral bracing. Plywood or OSB may be substituted for X-bracing.



Note: Top chords and some web members are not shown, in order to make drawings more readable.

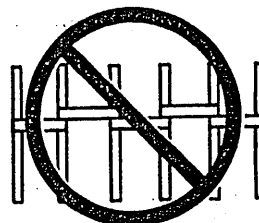
2) Bottom Chord Plane

In order to hold proper spacing on the bottom chord, temporary bracing is recommended on the top of the bottom chord.

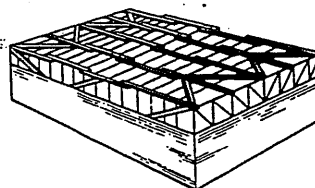


* Long spans, heavy loads or other spacing configurations may require closer spacing between lateral bracing and closer intervals between diagonals. Consult the building designer or HIB and DSB (Recommended Design Specification for Temporary Bracing of Metal-Plate Connected Wood Trusses) for details.

Diagonal or cross-bracing is very important!



Do not use short blocks to brace individual trusses without a specific bracing plan detailing their use

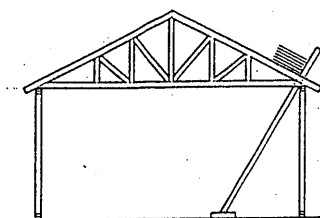
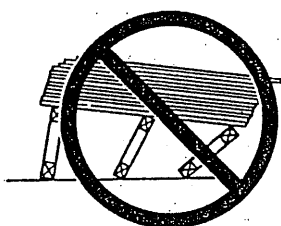


Bracing requirements using the same principles apply to parallel chord trusses

8 Stacking Materials

Do not proceed with building completion until all bracing is securely and properly in place

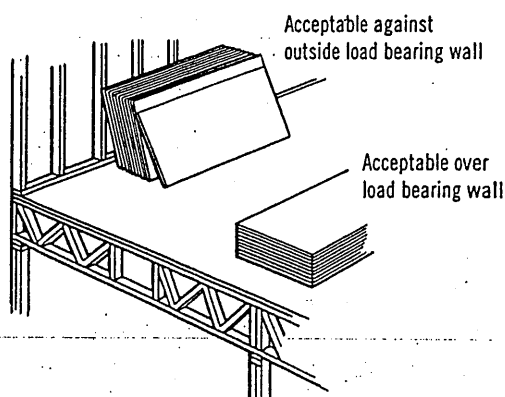
Never stack materials on unbraced or inadequately braced trusses



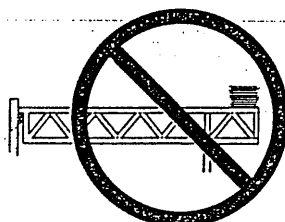
Platform must be rigidly braced

Proper distribution of construction materials is a must during construction.

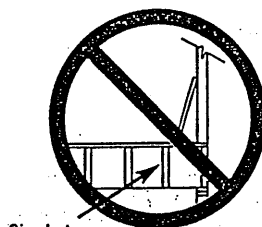
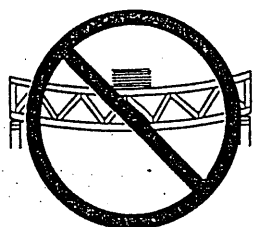
Never stack materials near a peak



Never stack materials on the cantilever of a truss

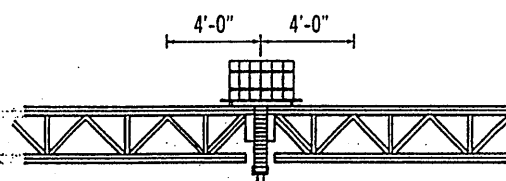


Always stack materials over two or more trusses.



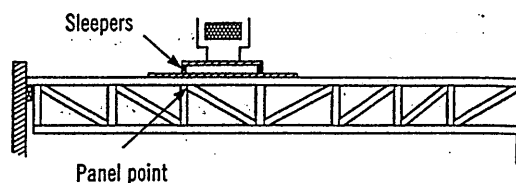
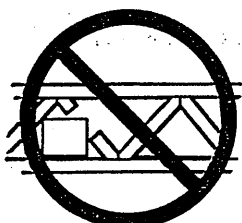
Single truss

Never overload small groups or single trusses. Position load over as many trusses as possible.



Roofing and mechanical contractors are cautioned to stack materials only along outside supporting members or directly over inside supporting members. Trusses are not designed for dynamic loads (i.e., moving vehicles). Extreme care should be taken when loading and stacking construction materials (rolled roofing, mechanical equipment, etc.) on the roof or floor system.

Never cut any structural member of a truss.



Panel point

Sleepers for mechanical equipment should be located at panel points (joints) or over main supporting members, and only on trusses that have been designed for such loads.

Caution Notes

Errors in building lines and/or dimensions, or errors by others shall be corrected by the contractor or responsible construction trade subcontractor or supplier before erection of trusses begins.

Cutting of nonstructural overhangs is considered a part of normal erection and shall be done by the builder or erection contractor.

Any field modification that involves the cutting, drilling, or relocation of any structural truss member or connector plate shall not be done without the approval of the truss manufacturer or a licensed design professional.

The methods and procedures outlined are intended to ensure that the overall construction techniques employed will put floor and roof trusses safely in place in a completed structure. These recommendations for bracing wood trusses originate from the collective experience of leading technical personnel in the wood truss industry, but must, due to the nature of responsibilities involved, be presented only as a guide for use by a qualified building designer, builder, or erection contractor. Thus, the Wood Truss Council of America expressly disclaims any responsibility for damages arising from the use, application, or reliance on the recommendations and information contained herein.

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