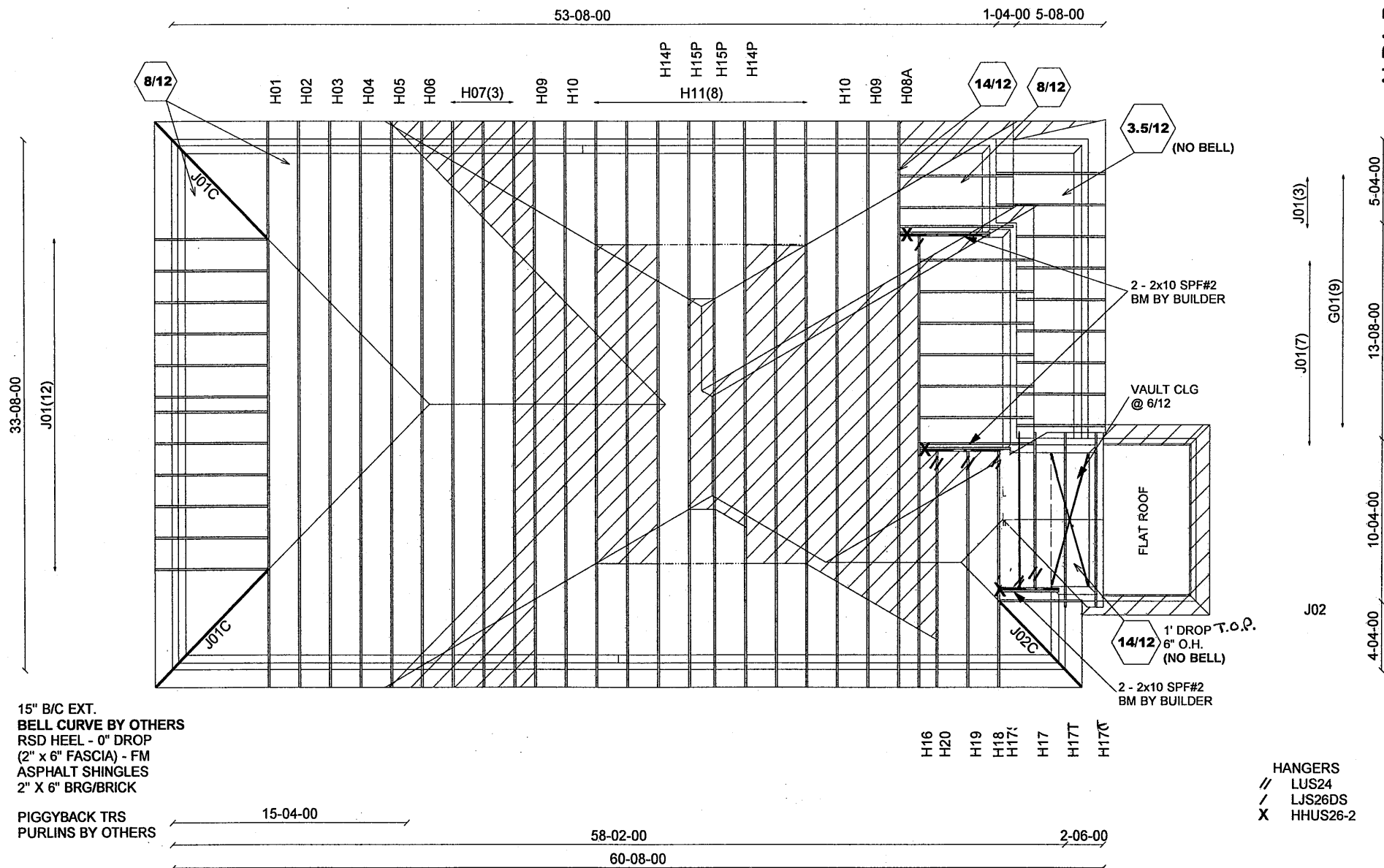




(ARCH. COMM.)
P.L. 108724

E20115017-E20175038

FORESTVIEW

IRONWOOD

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'



Job Track: **45147**
Layout ID: **324059**
Plan Log: **106926**

Builder / Location:
GOLD PARK HOMES / VAUGHAN

Project: **PINE VALLEY**

Date: **9/23/2020** Designer: **EMOZES**

Model / Elevation:
4206 / A

THESE DRAWINGS CONSTITUTE THE PROPERTY OF ALPA 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 ALPA ROOF TRUSSES INC AND WILL BE RETRACTED BY ALPA 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.

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NAIL VALUES						
PLATE	GRIP(DRY)		SHEAR		SECTION	
	(PSI)		(PLI)		(PLI)	
	MAX	MIN	MAX	MIN	MAX	MIN
MT20	650	371	1747	788	1987	1873
MT18HS	586	403	2455	1382	3163	3004

COMPANION LIVE LOAD FACTOR = 1.00

CONTINUED ON PAGE 2

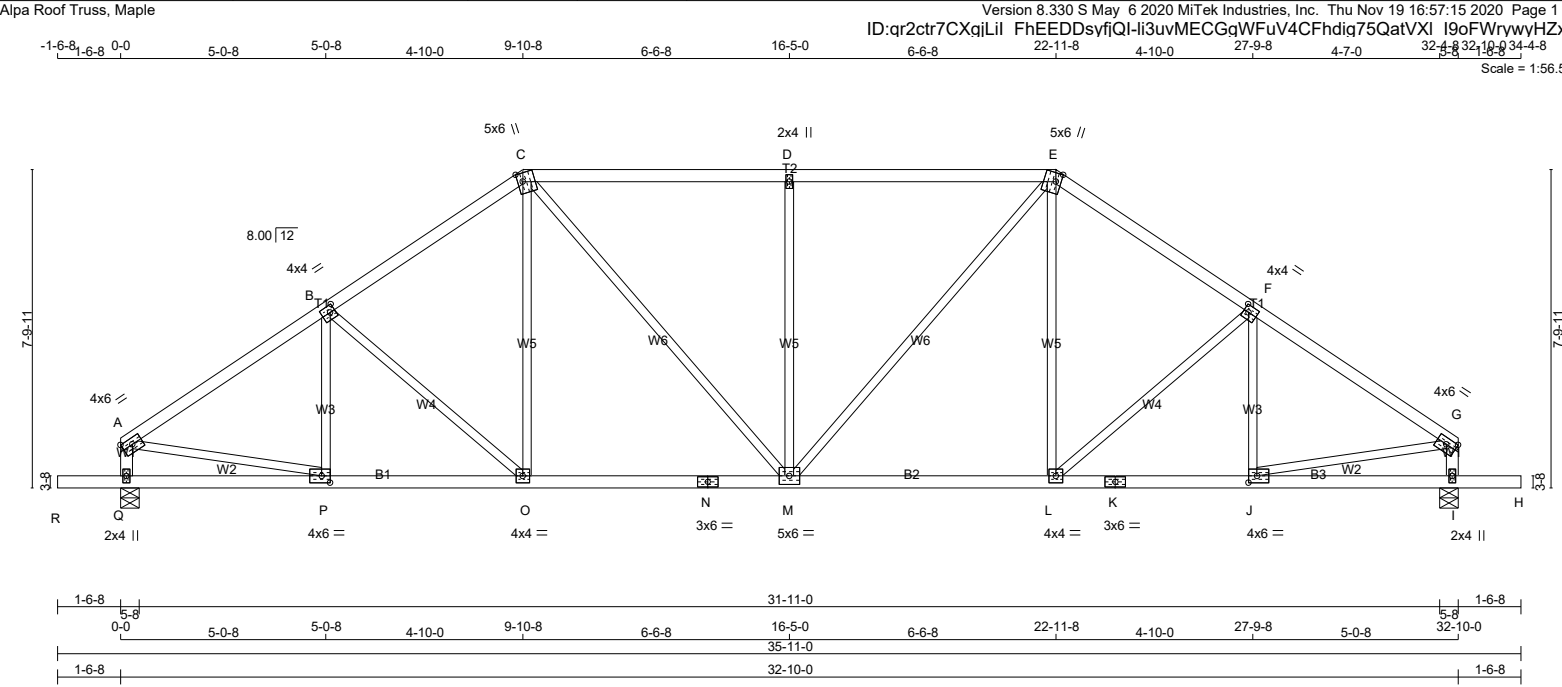
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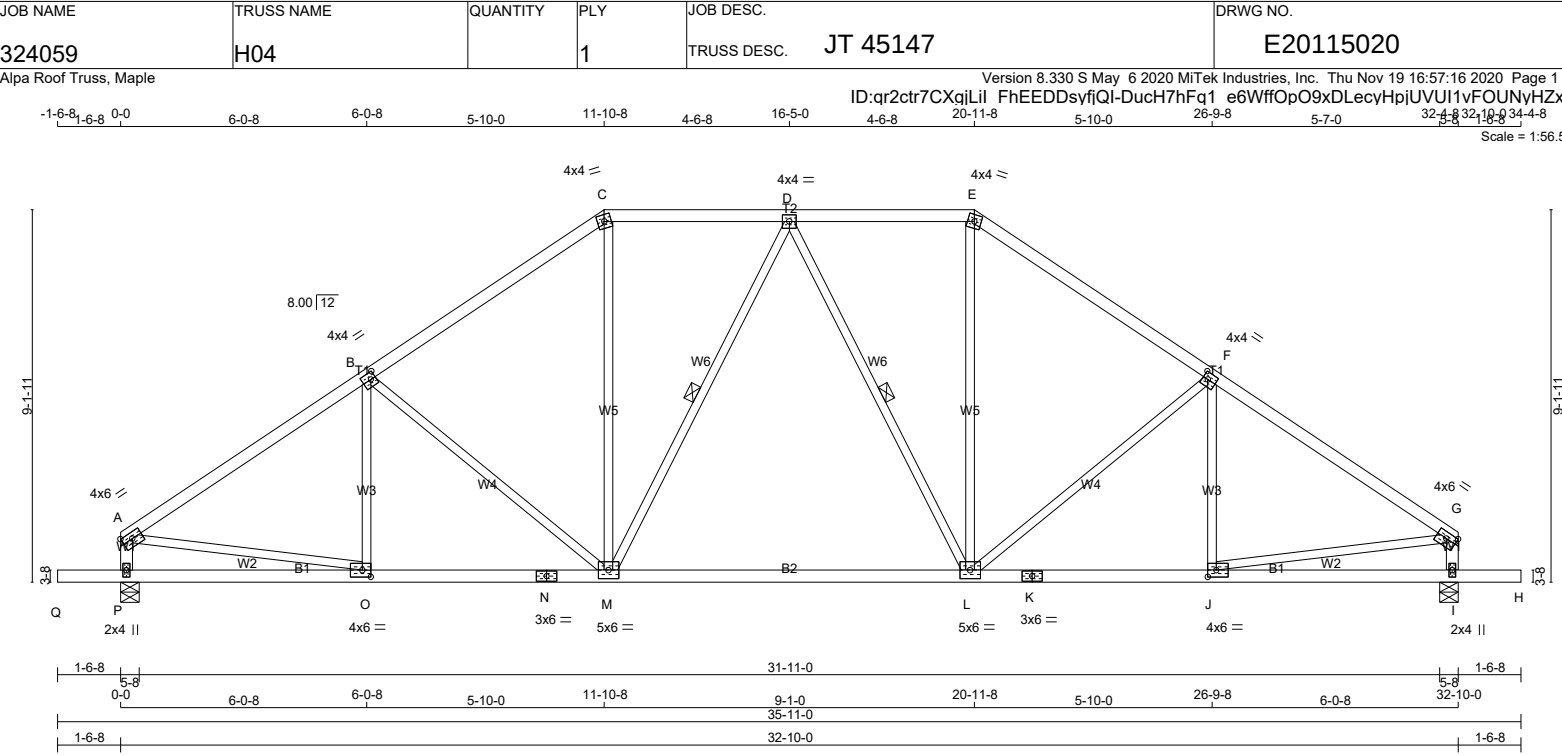
N- M	0 / 1555	-18.5	-18.5	0.40 (4)	10.00
M- L	0 / 1555	-18.5	-18.5	0.40 (4)	10.00
L- K	0 / 1563	-18.5	-18.5	0.39 (4)	10.00
K- J	0 / 0	-96.5	-96.5	0.16 (1)	10.00

JSI GRIP= 0.89 (H) (INPUT = 0.90)
JSI METAL= 0.47 (H) (INPUT = 1.00)

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H03		1	TRUSS DESC. JT 45147	E20115019



LUMBER										DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER										DESIGN CRITERIA									
N. L. G. A. RULES										BEARINGS										SPECIFIED LOADS:									
CHORDS SIZE LUMBER DESCR.										FACTORED GROSS REACTION MAXIMUM FACTORED GROSS REACTION INPUT REQ'D										TOP CH. LL = 21.0 PSF									
A - C 2x4 DRY No.2 SPF										JT VERT HORZ DOWN HORZ UPLIFT IN-SX BRG IN-SX BRG										DL = 6.0 PSF									
C - E 2x4 DRY No.2 SPF										Q 1732 0 1732 0 0 5-8 2-9										BOT CH. LL = 0.0 PSF									
E - G 2x4 DRY No.2 SPF										I 1732 0 1732 0 0 5-8 2-9										DL = 7.4 PSF									
Q - A 2x4 DRY No.2 SPF																				TOTAL LOAD = 34.4 PSF									
I - G 2x4 DRY No.2 SPF																													
R - N 2x4 DRY No.2 SPF																													
N - K 2x4 DRY No.2 SPF																													
K - H 2x4 DRY No.2 SPF																													
ALL WEBS 2x3 DRY No.2 SPF										UNFACTORED REACTIONS										SPACING = 24.0 IN. C/C									
EXCEPT										1ST LCASE MAX./MIN. COMPONENT REACTIONS																			
DRY: SEASONED LUMBER.										JT COMBINED SNOW LIVE PERM.LIVE WIND DEAD SOIL										LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM									
										Q 1235 754 / 0 0 / 0 0 / 0 0 / 0 481 / 0 0 / 0										THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 2015									
										I 1235 754 / 0 0 / 0 0 / 0 0 / 0 481 / 0 0 / 0										THIS DESIGN COMPLIES WITH:									
										BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) Q, I										- PART 9 OF BCBC 2018 , ABC 2019									
										BRACING										- PART 9 OF OBC 2012 (2019 AMENDMENT)									
										TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 4.46 FT.										- CSA 086-14									
										MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.										- TPIC 2014									
										ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.										(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									
										LOADING																			
										TOTAL LOAD CASES: (4)																			
										CHORDS																			
										MEMB. MAX. FACTORED FORCE (LBS) VERT. LOAD (PLF) MAX. UNBRACED LENGTH (LC1) MAX. FACTORED FORCE (LBS) MAX. FACTORED FORCE (LBS) MAX. FACTORED FORCE (LBS)																			
										FR-TO FROM TO FR-TO																			
										A- B -1950 / 0 -78.0 -78.0 0.30 (1) 4.57 P- B -202 / 0 0.06 (1)																			
										B- C -1785 / 0 -78.0 -78.0 0.28 (1) 4.74 B- O -239 / 0 0.18 (1)																			
										C- D -1792 / 0 -78.0 -78.0 0.49 (1) 4.46 O- C 0 / 265 0.06 (1)																			
										D- E -1792 / 0 -78.0 -78.0 0.49 (1) 4.46 C- M 0 / 496 0.11 (1)																			
										E- F -1785 / 0 -78.0 -78.0 0.28 (1) 4.74 M- D -626 / 0 0.71 (1)																			
										F- G -1950 / 0 -78.0 -78.0 0.30 (1) 4.57 M- E 0 / 496 0.11 (1)																			
										Q- A -1542 / 0 0.0 0.0 0.16 (1) 6.62 L- E 0 / 265 0.06 (1)																			
										I- G -1542 / 0 0.0 0.0 0.16 (1) 6.62 L- F -239 / 0 0.18 (1)																			
																				J- F -202 / 0 0.06 (1)									
										R- Q 0 / 0 -96.5 -96.5 0.16 (1) 10.00 A- P 0 / 1669 0.38 (1)																			
										Q- P 0 / 0 -18.5 -18.5 0.10 (4) 10.00 J- G 0 / 1669 0.38 (1)																			
										P- O 0 / 1643 -18.5 -18.5 0.33 (1) 10.00																			
										O- N 0 / 1466 -18.5 -18.5 0.32 (1) 10.00																			
										N- M 0 / 1466 -18.5 -18.5 0.32 (1) 10.00																			
										M- L 0 / 1466 -18.5 -18.5 0.32 (1) 10.00																			
										L- K 0 / 1643 -18.5 -18.5 0.33 (1) 10.00																			
										K- I 0 / 1643 -18.5 -18.5 0.33 (1) 10.00																			
PLATES (table is in inches)																													
JT TYPE PLATES W LEN Y X																													
A TMVW-t MT20 4.0 6.0 1.75 Edge																													
B TMWW-t MT20 4.0 4.0 2.00 1.50																													
C TTWW+m MT20 5.0 6.0 2.50 1.50																													
D TMW+w MT20 2.0 4.0																													
E TTWW+m MT20 5.0 6.0 2.50 1.50																													
F TMWW-t MT20 4.0 4.0 2.00 1.50																													
G TMVW-t MT20 4.0 6.0 1.75 Edge																													
I BMV1+p MT20 2.0 4.0																													
J BMWW-t MT20 4.0 6.0 2.00 2.50																													
K BS-t MT20 3.0 6.0																													
L BMWW-t MT20 4.0 4.0																													
M BMWWW-t MT20 5.0 6.0																													
N BS-t MT20 3.0 6.0																													
O BMWW-t MT20 4.0 4.0																													
P BMWW-t MT20 4.0 6.0 2.00 2.50																													
Q 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																													
																				</									



LUMBER			
N. L. G. A. RULES			
CHORDS	SIZE	LUMBER	DESCR.
A - C	2x4	DRY	No.2
C - E	2x4	DRY	No.2
E - G	2x4	DRY	No.2
P - A	2x4	DRY	No.2
I - G	2x4	DRY	No.2
Q - N	2x4	DRY	No.2
N - K	2x4	DRY	No.2
K - H	2x4	DRY	No.2
ALL WEBS	2x3	DRY	No.2
EXCEPT			SPF
DRY: SEASONED LUMBER.			

PLATES (table is in inches)				
JT	TYPE	PLATES	W	LEN Y X
A	TMVW-t	MT20	4.0	6.0 1.75 Edge
B	TMWW-t	MT20	4.0	4.0 2.00 1.50
C	TTW-m	MT20	4.0	4.0
D	TMWW-t	MT20	4.0	4.0
E	TTW-m	MT20	4.0	4.0
F	TMWW-t	MT20	4.0	4.0 2.00 1.50
G	TMVW-t	MT20	4.0	6.0 1.75 Edge
I	BMV1+p	MT20	2.0	4.0
J	BMWW-t	MT20	4.0	6.0 2.00 2.50
K	BS-t	MT20	3.0	6.0
L	BMWW-t	MT20	5.0	6.0
M	BMWW-t	MT20	5.0	6.0
N	BS-t	MT20	3.0	6.0
O	BMWW-t	MT20	4.0	6.0 2.00 2.50
P	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



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

BEARINGS		FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG	
JT	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	IN-SX	IN-SX
P	1732	0	1732	0	0	5-8	2-9		
I	1732	0	1732	0	0	5-8	2-9		

UNFACTORED REACTIONS		1ST LCASE		MAX./MIN. COMPONENT REACTIONS	
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND
P	1235	754 / 0	0 / 0	0 / 0	481 / 0
I	1235	754 / 0	0 / 0	0 / 0	481 / 0

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

BRACING
TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 4.39 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-M, D-L.

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				WEBS			
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	MAX. FACTORED VERT. LOAD (LC1)	MEMB.	MAX. FACTORED FORCE (LBS)	MAX. FACTORED VERT. LOAD (LC1)	MAX. FACTORED VERT. LOAD (LC1)
FR-TO		FROM	TO	FR-TO		FROM	TO
A-B	-1963 / 0	-78.0	-78.0 0.45 (1)	4.39	O-B	-140 / 29	0.06 (1)
B-C	-1676 / 0	-78.0	-78.0 0.41 (1)	4.71	B-M	-380 / 0	0.46 (1)
C-D	-1373 / 0	-78.0	-78.0 0.22 (1)	5.32	M-C	0 / 603	0.14 (1)
D-E	-1373 / 0	-78.0	-78.0 0.22 (1)	5.32	M-D	-239 / 0	0.17 (1)
E-F	-1676 / 0	-78.0	-78.0 0.41 (1)	4.71	D-L	-239 / 0	0.17 (1)
F-G	-1963 / 0	-78.0	-78.0 0.45 (1)	4.39	L-E	0 / 603	0.14 (1)
P-A	-1535 / 0	0.0	0.0 0.16 (1)	6.64	L-F	-380 / 0	0.46 (1)
I-G	-1535 / 0	0.0	0.0 0.16 (1)	6.64	J-F	-140 / 29	0.06 (1)
Q-P	0 / 0	-96.5	-96.5 0.16 (1)	10.00	A-O	0 / 1677	0.38 (1)
P-O	0 / 0	-18.5	-18.5 0.14 (4)	10.00	J-G	0 / 1677	0.38 (1)
O-N	0 / 1658	-18.5	-18.5 0.14 (4)	10.00			

J-I	0 / 0	-10.3	-10.3 0.14 (4)	10.00
I-H	0 / 0	-96.5	-96.5 0.16 (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

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, NBC 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 (1.09")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.07")
ALLOWABLE DEFL.(TL)= L/360 (1.09")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.23")

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=0.45/1.00 (F-G:1), BC=0.40/1.00 (J-L:1), WB=0.46/1.00 (F-L:1), SSI=0.19/1.00 (F-G:1)

DOL LUMBER=1.00 NAIL=1.00 LBS 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= 0.83 (O) (INPUT = 0.90)
JSI METAL= 0.52 (N) (INPUT = 1.00)

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H05		1	TRUSS DESC. JT 45147	E20115021

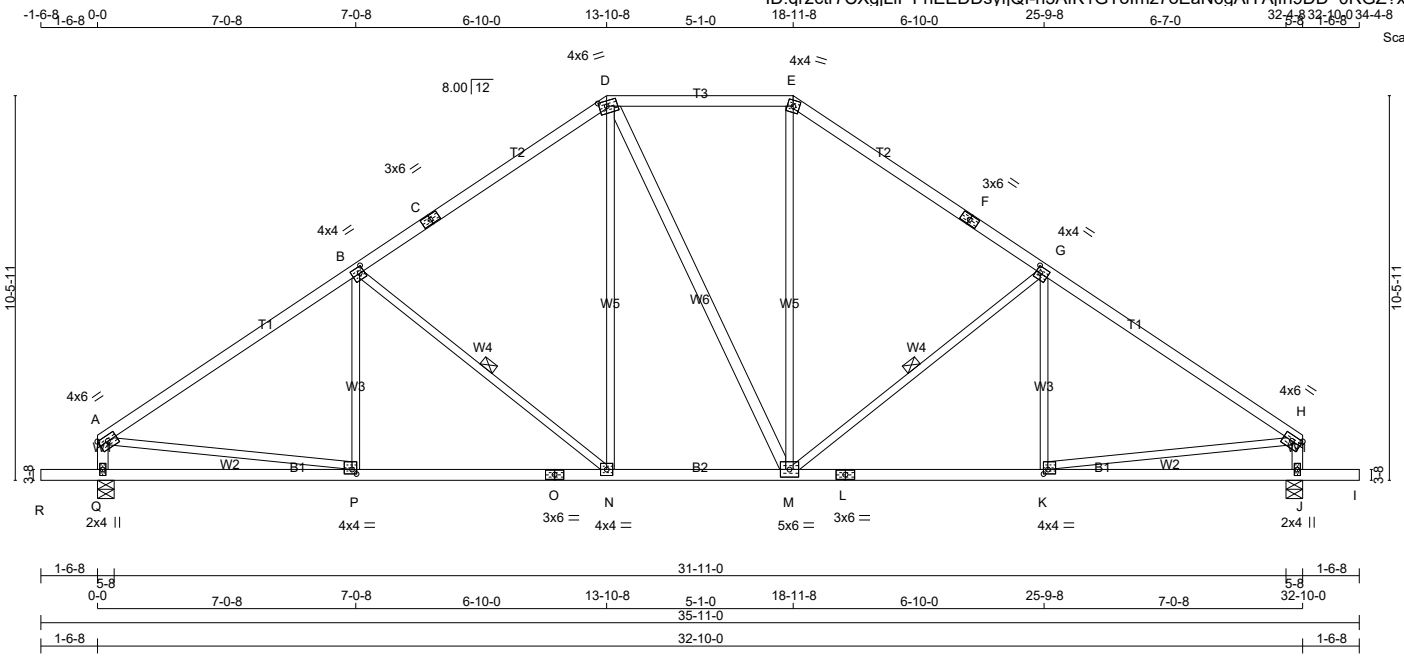
Alpa Roof Truss, Maple

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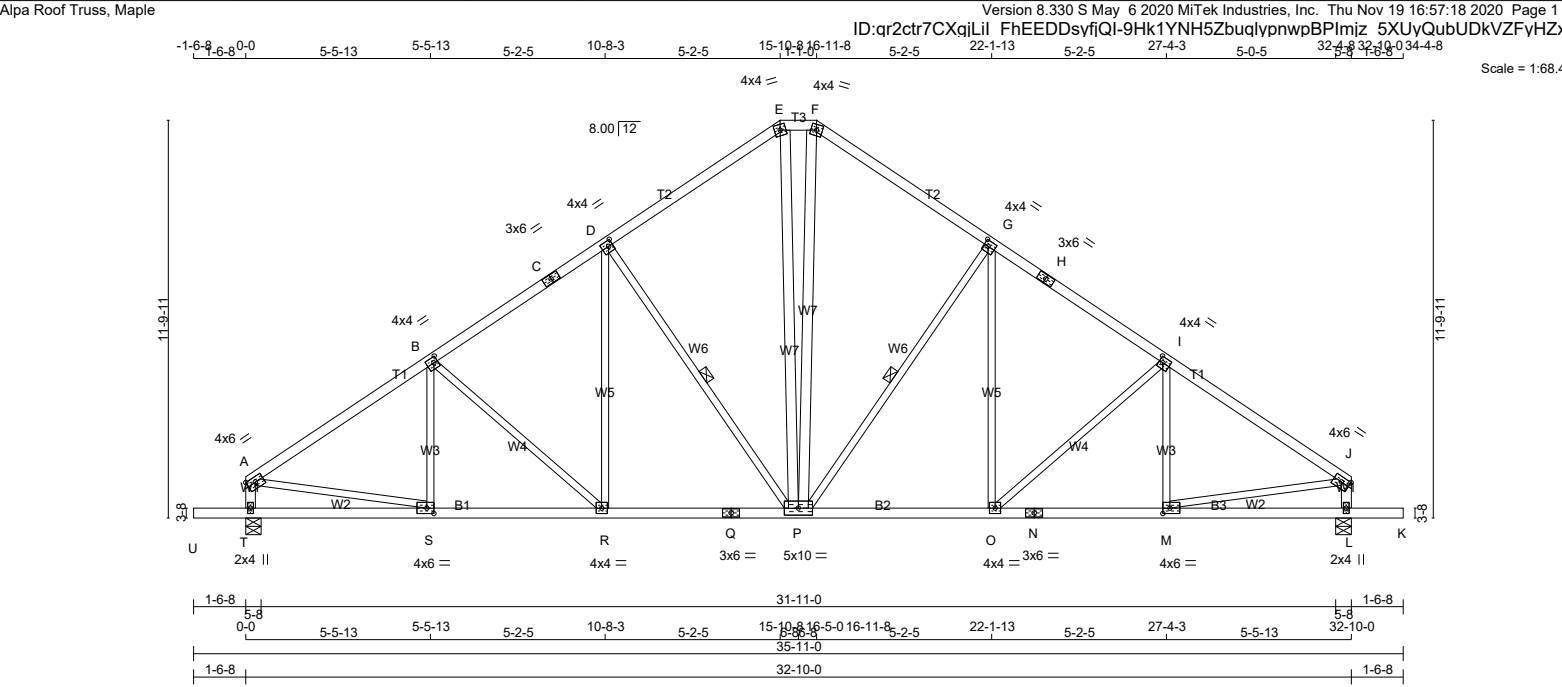
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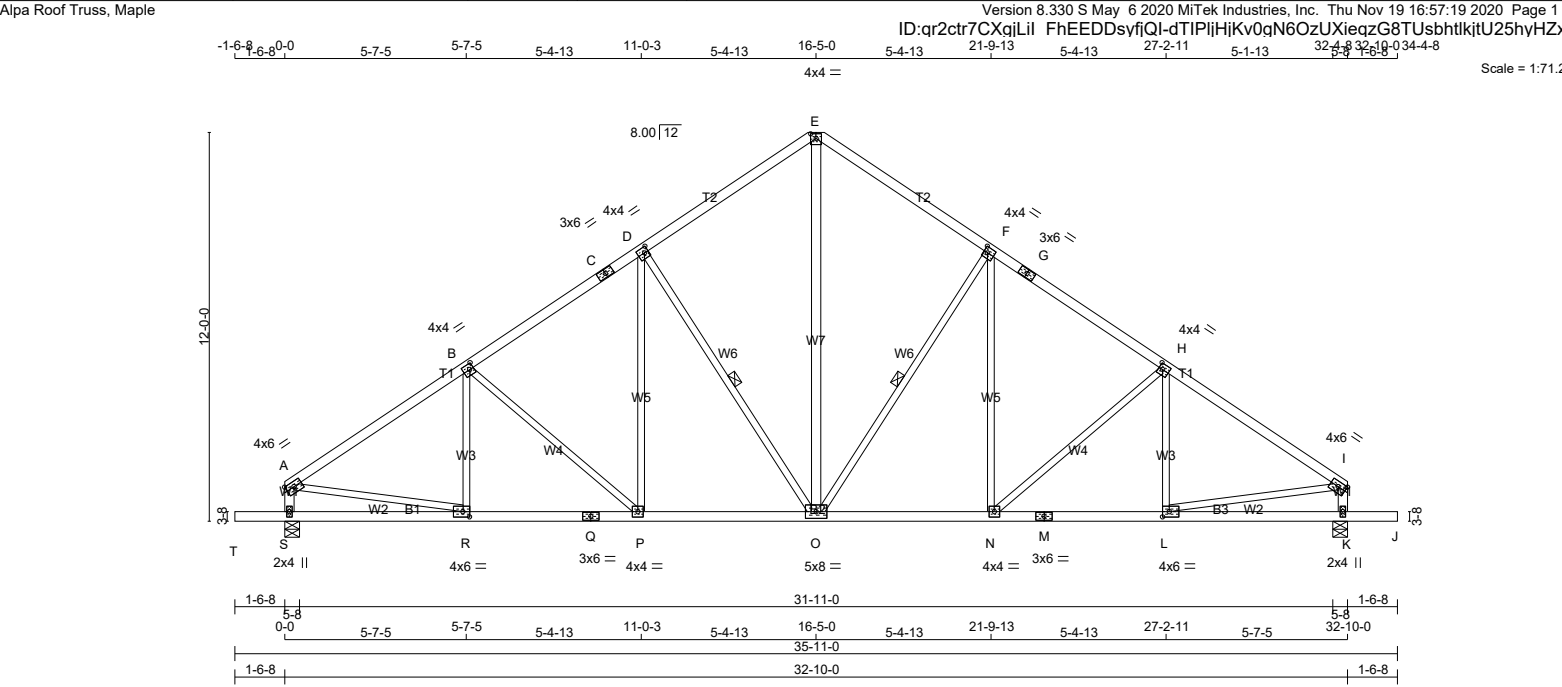


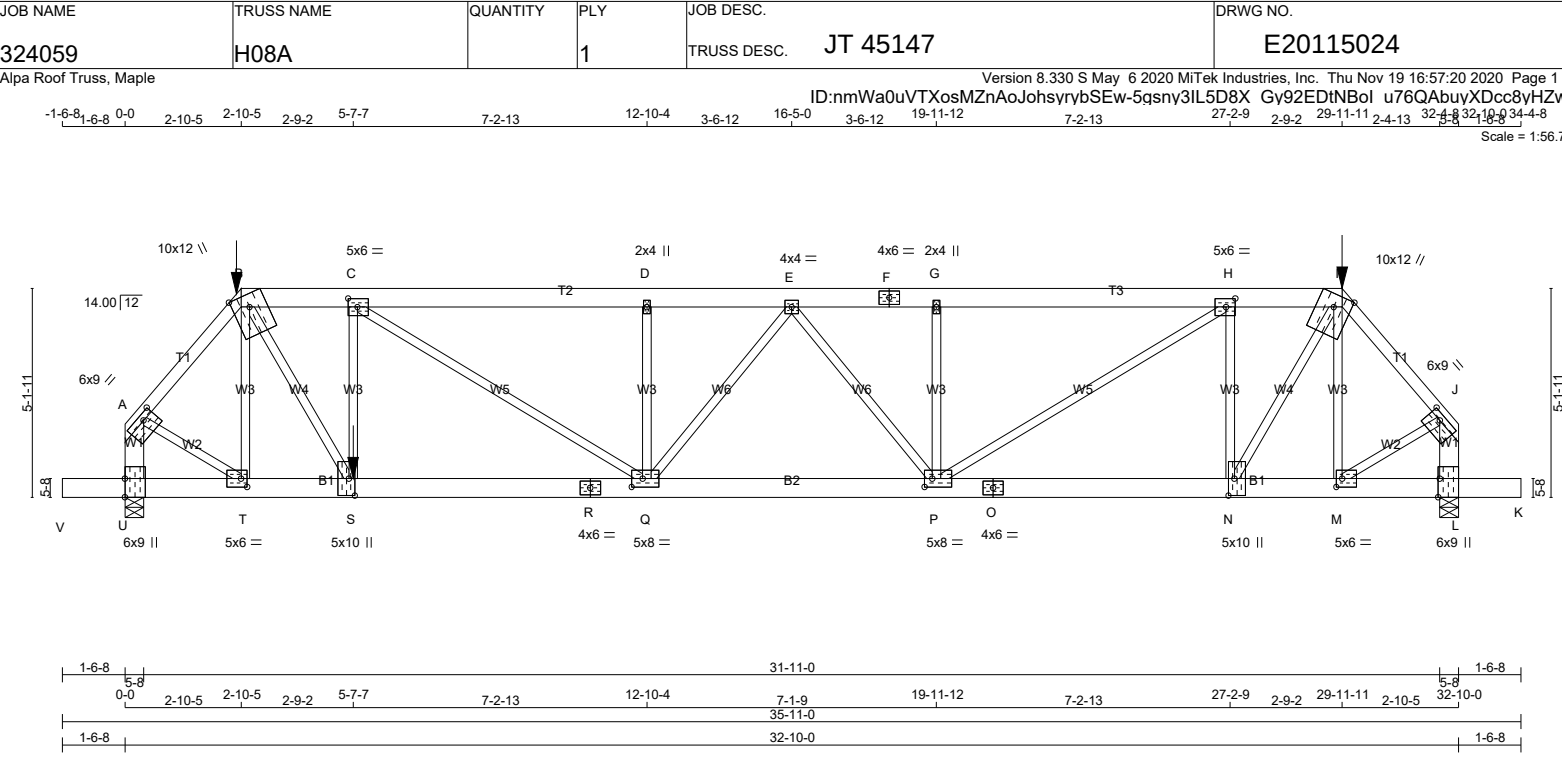
JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H06		1	TRUSS DESC. JT 45147	E20115022



LUMBER										DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER										DESIGN CRITERIA									
N. L. G. A. RULES										BEARINGS										SPECIFIED LOADS:									
CHORDS SIZE LUMBER DESCR.										FACTORED GROSS REACTION MAXIMUM FACTORED GROSS REACTION INPUT REQD										TOP CH. LL = 21.0 PSF									
A - C 2x4 DRY No.2 SPF										JT VERT HORZ DOWN HORZ UPLIFT IN-SX BRG IN-SX										DL = 6.0 PSF									
C - E 2x4 DRY No.2 SPF										T 1732 0 1732 0 0 5-8 2-9										BOT CH. LL = 0.0 PSF									
E - F 2x4 DRY No.2 SPF										L 1732 0 1732 0 0 5-8 2-9										DL = 7.4 PSF									
F - H 2x4 DRY No.2 SPF																				TOTAL LOAD = 34.4 PSF									
H - J 2x4 DRY No.2 SPF																													
T - A 2x4 DRY No.2 SPF																													
L - J 2x4 DRY No.2 SPF																													
U - Q 2x4 DRY No.2 SPF																													
Q - N 2x4 DRY No.2 SPF																													
N - K 2x4 DRY No.2 SPF																													
										UNFACTORED REACTIONS										SPACING = 24.0 IN./C									
ALL WEBS 2x3 DRY No.2 SPF										1ST LCASE MAX./MIN. COMPONENT REACTIONS										LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM									
EXCEPT										JT COMBINED SNOW LIVE PERM.LIVE WIND DEAD SOIL										THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 2015									
E - P 2x4 DRY No.2 SPF										T 1235 754 / 0 0 / 0 0 / 0 481 / 0 0 / 0										THIS DESIGN COMPLIES WITH:									
P - F 2x4 DRY No.2 SPF										L 1235 754 / 0 0 / 0 0 / 0 481 / 0 0 / 0										- PART 9 OF BCBC 2018 , ABC 2019									
										BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) T, L										- PART 9 OF OBC 2012 (2019 AMENDMENT)									
																				- CSA 086-14									
DRY: SEASONED LUMBER.																				- TPIC 2014									
										BRACING										(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									
										TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 4.52 FT.										ALLOWABLE DEFL.(LL)= L/360 (1.09")									
										MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.										CALCULATED VERT. DEFL.(LL) = L/ 999 (0.07")									
										ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.										ALLOWABLE DEFL.(TL)= L/360 (1.09")									
										1 LATERAL BRACE(S) AT 1/2 LENGTH OF D-P, G-P.										CALCULATED VERT. DEFL.(TL) = L/ 999 (0.15")									
										END VERTICAL(S) MUST BE SHEATHED OR HAVE BRACES AS INDICATED IN THE MAX. UNBRACED LENGTH COLUMN OF THE TABLE BELOW										CANTILEVER DEFLECTION:									
PLATES (table is in inches)										LOADING										ALLOWABLE DEFL.(LL)= L/120 (0.19")									
JT TYPE PLATES W LEN Y X										TOTAL LOAD CASES: (4)										CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")									
A TMVW-t MT20 4.0 6.0 1.75 Edge										CHORDS										ALLOWABLE DEFL.(TL)= L/120 (0.19")									
B, D, G, I										MEMB. MAX. FACTORED FORCE (LBS) FACTORED VERT. LOAD (PLF) MAX. LC1 (LC) UNBRACED LENGTH										CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")									
B TMVW-t MT20 4.0 4.0 2.00 1.50										FR-TO FROM TO										ALLOWABLE DEFL.(LL)= L/360 (1.09")									
C TS-t MT20 3.0 6.0										A-B -1953 / 0 -78.0 -78.0 0.35 (1) 4.52										CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")									
E TTW-m MT20 4.0 4.0										B-C -1746 / 0 -78.0 -78.0 0.28 (1) 4.79										ALLOWABLE DEFL.(TL)= L/360 (1.09")									
F TTW-m MT20 4.0 4.0										C-D -1746 / 0 -78.0 -78.0 0.28 (1) 4.79										CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")									
H TS-t MT20 3.0 6.0										D-E -1357 / 0 -78.0 -78.0 0.27 (1) 5.29										CSI: TC=0.35/1.00 (I-J:1), BC=0.32/1.00 (M-O:1), WB=0.40/1.00 (G-P:1), SSI=0.16/1.00 (I-J:1)									
J TMVW-t MT20 4.0 6.0 1.75 Edge										E-F -1135 / 0 -78.0 -78.0 0.02 (1) 5.95										DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10									
L BMV1+p MT20 2.0 4.0										F-G -1357 / 0 -78.0 -78.0 0.27 (1) 5.29										COMP=1.10 SHEAR=1.10 TENS= 1.10									
M BMWW-t MT20 4.0 6.0 2.00 2.50										G-H -1746 / 0 -78.0 -78.0 0.28 (1) 4.79										COMPANION LIVE LOAD FACTOR = 1.00									
N BS-t MT20 3.0 6.0										H-I -1746 / 0 -78.0 -78.0 0.28 (1) 4.79										AUTOSOLVE HEELS OFF									
O BMWW-t MT20 4.0 4.0										I-J -1953 / 0 -78.0 -78.0 0.35 (1) 4.52										TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT .									
P BMWWWW-t MT20 5.0 10.0										T-A -1540 / 0 0.0 0.0 0.16 (1) 6.63										NAIL VALUES									
Q BS-t MT20 3.0 6.0										L-J -1540 / 0 0.0 0.0 0.16 (1) 6.63										PLATE GRIP(DRY) SHEAR SECTION (PSI) (PLI) (PLI)									
R BMWW-t MT20 4.0 4.0																				MAX MIN MAX MIN MAX MIN									
S BMWW-t MT20 4.0 6.0 2.00 2.50																				MT20 650 371 1747 788 1987 1873									
T BMV1+p MT20 2.0 4.0																				PLATE PLACEMENT TOL. = 0.250 inches									
Edge - INDICATES REFERENCE CORNER OF PLATE TOUCHES EDGE OF CHORD.																				PLATE ROTATION TOL. = 5.0 Deg.									
																				JSI GRIP= 0.84 (S) (INPUT = 0.90)									
																				JSI METAL= 0.49 (A) (INPUT = 1.00)									

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H07		1	TRUSS DESC. JT 45147	E20115023





LUMBER			
N. L. G. A. RULES			
CHORDS	SIZE	LUMBER	DESCR.
A - B	2x4	DRY	No.2
B - F	2x6	DRY	No.2
F - I	2x6	DRY	No.2
I - J	2x4	DRY	No.2
U - A	2x6	DRY	No.2
L - J	2x6	DRY	No.2
V - R	2x6	DRY	No.2
R - O	2x6	DRY	No.2
O - K	2x6	DRY	No.2
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-t	MT20	6.0	9.0	1.75 3.50
B	TTWW+m	MT20	10.0	12.0	Edge
C	TMWW-t	MT20	5.0	6.0	2.50 2.75
D	TMW+w	MT20	2.0	4.0	
E	TMWW-t	MT20	4.0	4.0	
F	TS-t	MT20	4.0	6.0	
G	TMW+w	MT20	2.0	4.0	
H	TMWW-t	MT20	5.0	6.0	2.50 2.75
I	TTWW+m	MT20	10.0	12.0	Edge
J	TMVW-t	MT20	6.0	9.0	1.75 3.50
L	BMV1-t	MT20	6.0	9.0	Edge 0.50
M	BMWW-t	MT20	5.0	6.0	2.50 1.75
N	BMWW-t	MT20	5.0	10.0	5.00 1.75
O	BS-t	MT20	4.0	6.0	
P	BMWW-t	MT20	5.0	8.0	2.50 2.25
Q	BMWW-t	MT20	5.0	8.0	2.50 3.25
R	BS-t	MT20	4.0	6.0	
S	BMWW-t	MT20	5.0	10.0	5.00 1.75
T	BMWW-t	MT20	5.0	6.0	2.50 1.75
U	BMV1-t	MT20	6.0	9.0	Edge
Edge - INDICATES REFERENCE CORNER OF PLATE TOUCHES EDGE OF CHORD.					

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



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

BEARINGS		FACTORED GROSS REACTION		MAXIMUM FACTORED GROSS REACTION		INPUT BRG		REQRD BRG	
JT	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	IN-SX	IN-SX
U	4291	0	4291	0	0	5-8	5-8	5-8	5-8
L	2368	0	2368	0	0	5-8	5-8	5-8	5-8

UNFACTORED REACTIONS		1ST LCASE		MAX./MIN. COMPONENT REACTIONS	
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND
U	3021	2057 / 0	0 / 0	0 / 0	0 / 0
L	1678	1085 / 0	0 / 0	0 / 0	0 / 0

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) U, L
BEARING SIZE FACTOR = 1.15 AT JNT(S) U (BASED ON SUPPORT DEPTH = 1-8)

BRACING
TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 3.31 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 (LBS)	VERT.	LOAD (PLF)	LC1	MAX	MEMB.	FORCE (LBS)	MAX	CSI (LC)
FR-TO									
A-B	-3818 / 0	-78.0	-78.0	0.36 (1)	3.31	T-B	-879 / 0	0.31 (1)	
B-C	-4442 / 0	-153.5	-153.5	0.26 (1)	3.91	B-S	0 / 3894	0.96 (1)	
C-D	-4833 / 0	-78.0	-78.0	0.44 (1)	3.63	S-C	-802 / 0	0.28 (1)	
D-E	-4833 / 0	-78.0	-78.0	0.34 (1)	3.68	N-H	-1645 / 0	0.58 (1)	
E-F	-4091 / 0	-78.0	-78.0	0.27 (1)	4.03	N-I	0 / 2024	0.50 (1)	
F-G	-4091 / 0	-78.0	-78.0	0.27 (1)	4.03	M-I	-519 / 0	0.18 (1)	
G-H	-4091 / 0	-78.0	-78.0	0.36 (1)	3.98	A-T	0 / 2731	0.68 (1)	
H-I	-2311 / 0	-78.0	-78.0	0.23 (1)	5.14	M-J	0 / 1423	0.35 (1)	
I-J	-1990 / 0	-78.0	-78.0	0.19 (1)	4.60	C-Q	0 / 466	0.12 (1)	
U-A	-4140 / 0	0.0	0.0	0.32 (1)	5.23	Q-D	-506 / 0	0.18 (1)	
L-J	-2211 / 0	0.0	0.0	0.17 (1)	6.84	P-G	-480 / 0	0.17 (1)	
V-U	0 / 0	-96.5	-96.5	0.08 (1)	10.00	P-H	0 / 2121	0.52 (1)	
U-T	0 / 0	-36.4	-36.4	0.11 (1)	10.00	Q-E	0 / 526	0.13 (1)	
T-S	0 / 2466	-36.4	-36.4	0.43 (1)	10.00	E-P	-699 / 0	0.41 (1)	
S-P	0 / 4442	-18.5	-18.5	0.69 (1)	10.00				

FACTORED CONCENTRATED LOADS (LBS)		MAX.		FACE		DIR.		TYPE		HEEL		CONN.	
JT	LOC.	LC1	MAX-	MAX+	FRONT	VERT	VERT	TOTAL	TOTAL	---	---	C1	C1
B	2-10-5	-163	-163	---	FRONT	VERT	VERT	TOTAL	TOTAL	---	---	C1	C1
I	29-11-11	-162	-162	---	FRONT	VERT	VERT	TOTAL	TOTAL	---	---	C1	C1
S	5-7-7	-2561	-2561	---	FRONT	VERT	VERT	TOTAL	TOTAL	---	---	C1	C1

CONNECTION REQUIREMENTS
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/C

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

GIRDER TYPE: CPrimeHip
SIDE SETBACK = 2-10-5
END SETBACK = 5-10-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDTL LOADS BASED ON 55 % OF GSL.
LOADS APPLIED TO FIRST 5-7-7 OF SPAN
MEASURED FROM THE LEFT.

*** 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

(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 (1.09")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.18")
ALLOWABLE DEFL.(TL)= L/360 (1.09")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.34")

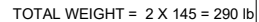
CANTILEVER DEFLECTION:
ALLOWABLE DEFL.(LL)= L/120 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.00")
ALLOWABLE DEFL.(TL)= L/120 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.00")

CSI: TC=0.44/1.00 (C-D:1) , BC=0.69/1.00 (Q-S:1) , WB=0.96/1.00 (B-S:1) , SSI=0.19/1.00 (C-D:1)

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

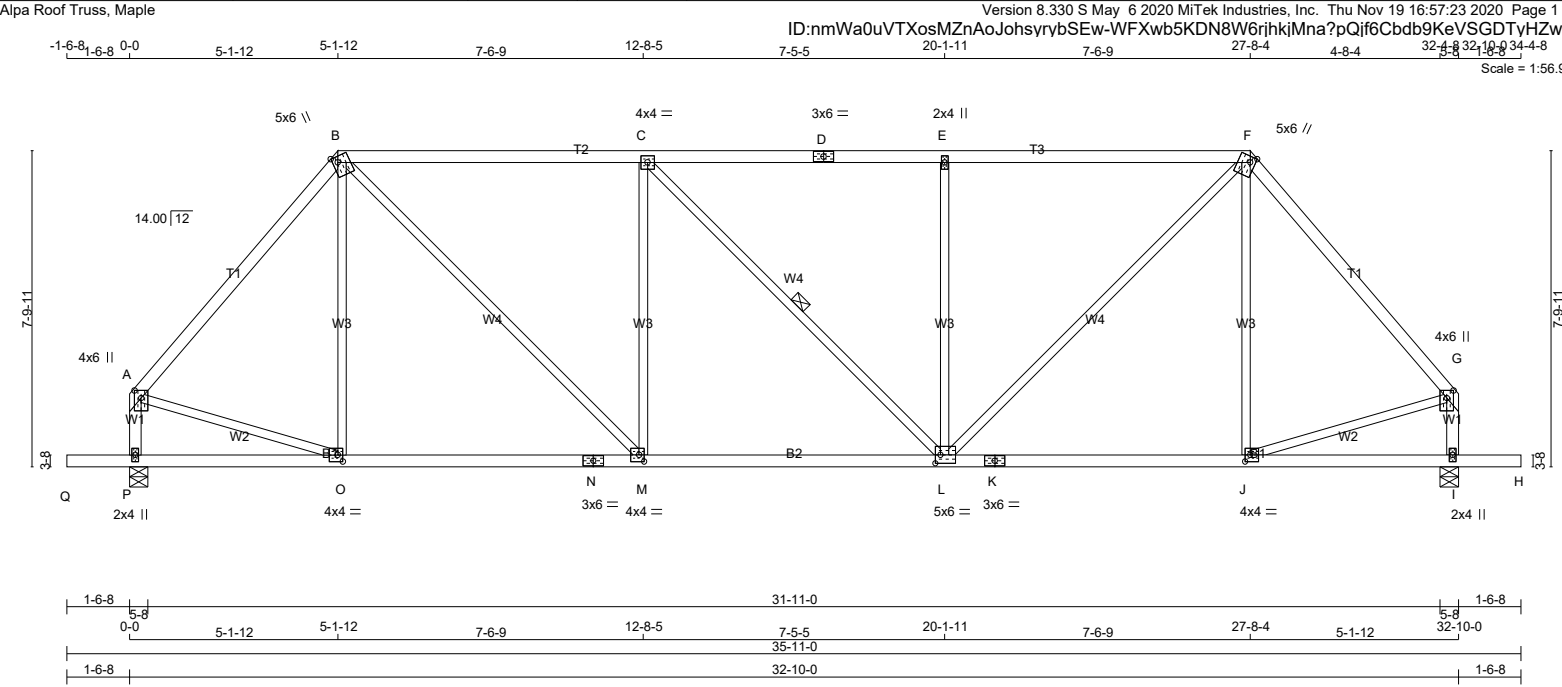
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

Scale = 1:56.9

JSI GRIP= 0.90 (B) (INPUT = 0.90)
JSI METAL= 0.60 (O) (INPUT = 1.00)

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H10		1	TRUSS DESC. JT 45147	E20115026



LUMBER										DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER										DESIGN CRITERIA									
N. L. G. A. RULES																				SPECIFIED LOADS:									
CHORDS SIZE LUMBER DESCR.										BEARINGS										TOP CH. LL = 21.0 PSF									
A - B 2x4 DRY No.2 SPF										FACTORED MAXIMUM FACTORED INPUT REQ'D										DL = 6.0 PSF									
B - D 2x4 DRY No.2 SPF										GROSS REACTION GROSS REACTION BRG BRG										BOT CH. LL = 0.0 PSF									
D - F 2x4 DRY No.2 SPF										JT VERT HORZ DOWN HORZ UPLIFT IN-SX IN-SX										DL = 7.4 PSF									
F - G 2x4 DRY No.2 SPF										P 1732 0 1732 0 0 5-8 2-9										TOTAL LOAD = 34.4 PSF									
P - A 2x4 DRY No.2 SPF										I 1732 0 1732 0 0 5-8 2-9																			
I - G 2x4 DRY No.2 SPF																													
Q - N 2x4 DRY No.2 SPF										UNFACTORED REACTIONS																			
N - K 2x4 DRY No.2 SPF										1ST LCASE MAX./MIN. COMPONENT REACTIONS																			
K - H 2x4 DRY No.2 SPF										JT COMBINED SNOW LIVE PERM.LIVE WIND DEAD SOIL																			
ALL WEBS 2x3 DRY No.2 SPF										P 1235 754 / 0 0 / 0 0 / 0 481 / 0 0 / 0																			
EXCEPT										I 1235 754 / 0 0 / 0 0 / 0 481 / 0 0 / 0																			
DRY: SEASONED LUMBER.										BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) P, I										LOADING IN FLAT SECTION BASED ON A SLOPE OF 2.00/12 MINIMUM									
										BRACING										THIS TRUSS IS DESIGNED FOR RESIDENTIAL OR SMALL BUILDING REQUIREMENTS OF PART 9, NBCC 2015									
										TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 4.10 FT.										THIS DESIGN COMPLIES WITH:									
										MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.										- PART 9 OF BCBC 2018 , ABC 2019									
										ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.										- PART 9 OF OBC 2012 (2019 AMENDMENT)									
										1 LATERAL BRACE(S) AT 1/2 LENGTH OF C-L.										- CSA 086-14									
										END VERTICAL(S) MUST BE SHEATHED OR HAVE BRACES AS INDICATED IN THE MAX. UNBRACED LENGTH COLUMN OF THE TABLE BELOW										- TPIC 2014									
										LOADING										(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									
										TOTAL LOAD CASES: (4)										ALLOWABLE DEFL.(LL)= L/360 (1.09")									
										CHORDS WEBS										CALCULATED VERT. DEFL.(LL) = L/ 999 (0.07")									
										MEMB. MAX. FACTORED FORCE (LBS) FACTORED VERT. LOAD LC1 MAX. MAX. MEMB. MAX. FACTORED FORCE (LBS) MAX. CSI (LC)										ALLOWABLE DEFL.(TL)= L/360 (1.09")									
										FR-TO FROM TO LENGTH FR-TO										CALCULATED VERT. DEFL.(TL) = L/ 999 (0.17")									
										A- B -1438 / 0 -78.0 -78.0 0.49 (1) 4.94 O- B -123 / 45 0.14 (1)										CANTILEVER DEFLECTION:									
										B- C -1709 / 0 -78.0 -78.0 0.80 (1) 4.10 B- M 0 / 1096 0.25 (1)										ALLOWABLE DEFL.(LL)= L/120 (0.19")									
										C- D -1708 / 0 -78.0 -78.0 0.79 (1) 4.10 M- C -632 / 0 0.72 (1)										CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")									
										D- E -1708 / 0 -78.0 -78.0 0.79 (1) 4.10 C- L -1 / 0 0.00 (1)										ALLOWABLE DEFL.(TL)= L/120 (0.19")									
										E- F -1708 / 0 -78.0 -78.0 0.80 (1) 4.11 L- E -632 / 0 0.72 (1)										CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")									
										F- G -1438 / 0 -78.0 -78.0 0.49 (1) 4.94 L- F 0 / 1094 0.25 (1)										CSI: TC=0.80/1.00 (B-C:1) , BC=0.39/1.00 (L-M:1) ,									
										P- A -1550 / 0 0.0 0.0 0.17 (1) 6.61 J- F -122 / 46 0.14 (1)										WB=0.72/1.00 (C-M:1) , SSI=0.27/1.00 (B-C:1) ,									
										I- G -1550 / 0 0.0 0.0 0.17 (1) 6.61 A- O 0 / 966 0.22 (1)										DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10									
										Q- P 0 / 0 -96.5 -96.5 0.16 (1) 10.00 J- G 0 / 966 0.22 (1)										COMP=1.10 SHEAR=1.10 TENS= 1.10									
										P- O 0 / 0 -18.5 -18.5 0.18 (4) 10.00										COMPANION LIVE LOAD FACTOR = 1.00									
										O- M 0 / 0 -18.5 -18.5 0.18 (4) 10.00										TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT .									
										J- I 0 / 0 -10.3 -10.3 0.10 (4) 10.00										NAIL VALUES									
										I- H 0 / 0 -96.5 -96.5 0.16 (1) 10.00										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= 0.88 (G) (INPUT = 0.90)									
																				JSI METAL= 0.53 (G) (INPUT = 1.00)									

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

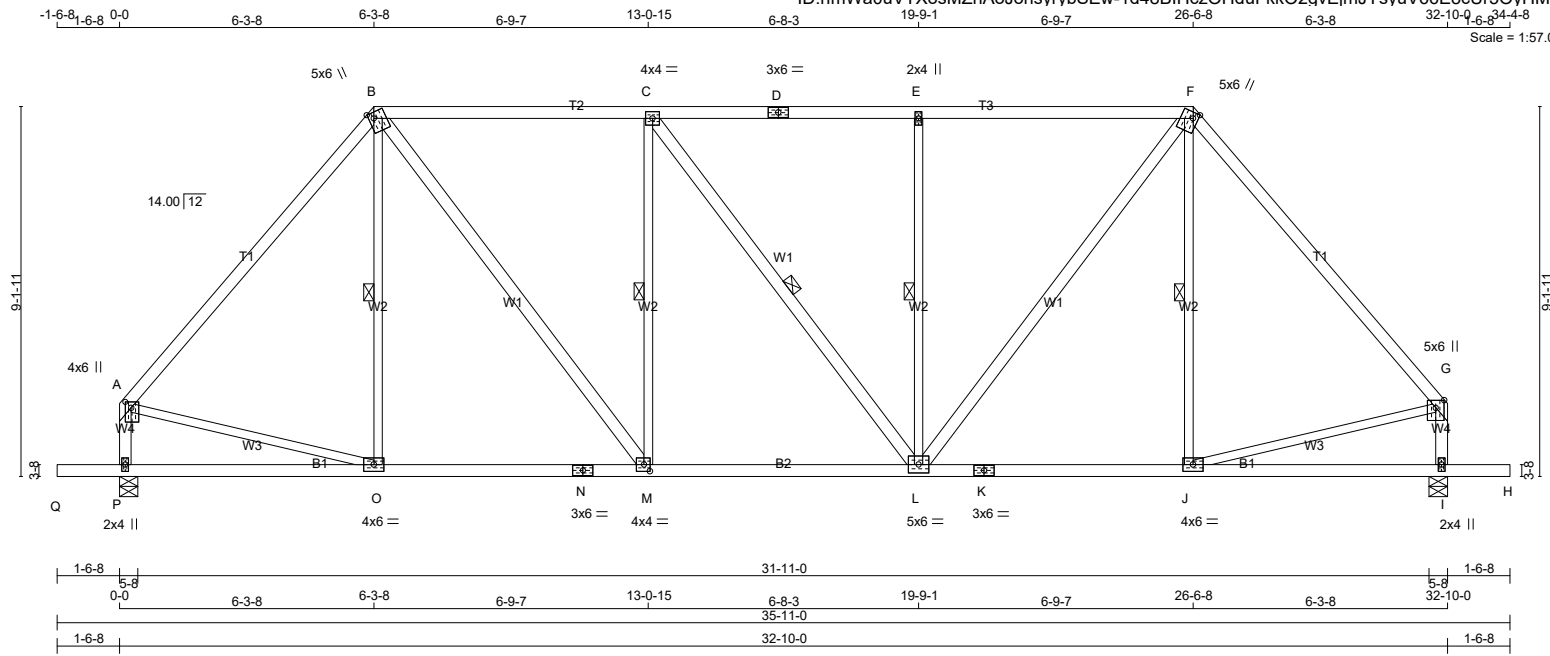
LICENSED PROFESSIONAL ENGINEER

Y. WIDYA

100225448

11/19/2020

PROVINCE OF ONTARIO



TOTAL WEIGHT = 8 X 165 = 1318 lb

LUMBER				
N. L. G. A. RULES				
CHORDS	SIZE		LUMBER	DESCR.
A - B	2x4	DRY	2100F 1.8E	SPF
B - D	2x4	DRY	No.2	SPF
D - F	2x4	DRY	No.2	SPF
F - G	2x4	DRY	2100F 1.8E	SPF
P - A	2x4	DRY	No.2	SPF
I - G	2x4	DRY	No.2	SPF
Q - N	2x4	DRY	No.2	SPF
N - K	2x4	DRY	No.2	SPF
K - H	2x4	DRY	No.2	SPF
ALL WEBS EXCEPT	2x3	DRY	No.2	SPF
B - M	2x4	DRY	No.2	SPF
C - L	2x4	DRY	No.2	SPF
L - F	2x4	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	1.75	1.50
B	TTWW+m	MT20	5.0	6.0	1.75	1.50
C	TMVW-t	MT20	4.0	4.0		
D	TS-t	MT20	3.0	6.0		
E	TMW+m	MT20	2.0	4.0		
F	TTWW+m	MT20	5.0	6.0	1.75	1.50
G	TMVW+p	MT20	5.0	6.0	2.25	2.50
I	BMV1+p	MT20	2.0	4.0		
J	BMVW-t	MT20	4.0	6.0		
K	BS-t	MT20	3.0	6.0		
L	BMVWV-t	MT20	5.0	6.0		
M	BMVW-t	MT20	4.0	4.0	2.00	1.75
N	BS-t	MT20	3.0	6.0		
O	BMVW-t	MT20	4.0	6.0		
P	BMV1+p	MT20	2.0	4.0		

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



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
P	1808	0	1808	0	0	5-8	2-11
I	1808	0	1808	0	0	5-8	2-11

UNFACTORED REACTIONS

1ST LCASE		MAX./MIN. COMPONENT REACTIONS					
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL
P	1296	754 / 0	0 / 0	0 / 0	0 / 0	542 / 0	0 / 0
I	1296	754 / 0	0 / 0	0 / 0	0 / 0	542 / 0	0 / 0

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

BRACING

FOR SECTION B-F, MAX. PURLIN SPACING = 2.00 FT.
FOR OTHER SECTIONS, TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 5.82 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 B-O, C-M, C-L, E-L, F-J.

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				WEBS			
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	-1509 / 0	-78.0	-78.0 0.47 (1)	5.82	O-B	-83 / 57	0.05 (1)
B-C	-1551 / 0	-85.5	-85.5 0.66 (1)	2.00	B-M	0 / 939	0.15 (1)
C-D	-1550 / 0	-85.5	-85.5 0.65 (1)	2.00	M-C	-622 / 0	0.34 (1)
D-E	-1550 / 0	-85.5	-85.5 0.65 (1)	2.00	C-L	-2 / 0	0.00 (1)
E-F	-1550 / 0	-85.5	-85.5 0.65 (1)	2.00	L-E	-622 / 0	0.34 (1)
F-G	-1509 / 0	-78.0	-78.0 0.47 (1)	5.82	L-F	0 / 937	0.15 (1)
P-A	-1613 / 0	0.0	0.0 0.18 (1)	6.51	J-F	-82 / 57	0.04 (1)
I-G	-1613 / 0	0.0	0.0 0.18 (1)	6.51	A-O	0 / 1003	0.23 (1)
					J-G	0 / 1004	0.23 (1)
Q-P	0 / 0	-96.5	-96.5 0.16 (1)	10.00			
B-O	0 / 0	-18.5	-18.5 0.19 (1)	10.00			

N-J	0/9/0	-10.3	-10.3	0.30 (4)	10.00
J-I	0/0	-18.5	-18.5	0.19 (4)	10.00
I-H	0/0	-96.5	-96.5	0.16 (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

SPACING = 24.0 IN. C/C

LOADING IN FLAT SECTION BASED ON
PIGGYBACK TRUSS WITH SLOPES OF 6.00/12
AND -6.00/12 AND RESPECTIVE WALL HEIGHTS
OF 0-0 AND 0-0 AND AN ADDITIONAL DEAD
LOAD OF 3.0 P.S.F.

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 (1.09")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.05")
ALLOWABLE DEFL.(TL)= L/360 (1.09")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.13")

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=0.66/1.00 (B-C:1) , BC=0.34/1.00 (L-M:1) ,
WB=0.34/1.00 (C-M:1) , SSI=0.27/1.00 (B-C:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

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

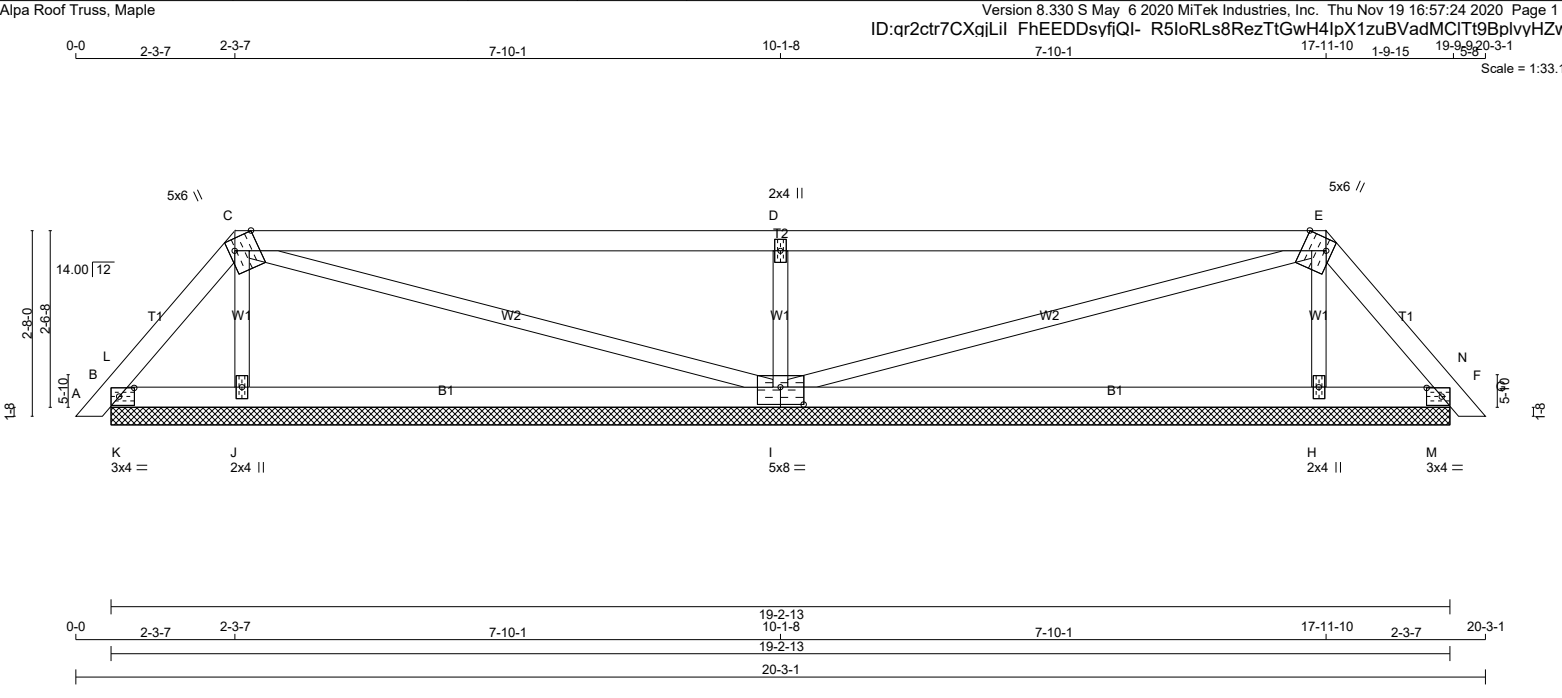
NAIL VALUES						
PLATE	GRIP(DRY)		SHEAR		SECTION	
	(PSI)		(PLI)		(PLI)	
	MAX	MIN	MAX	MIN	MAX	MIN
MT20	650	371	1747	788	1987	1873

PLATE PLACEMENT TOL. = 0.250 inches

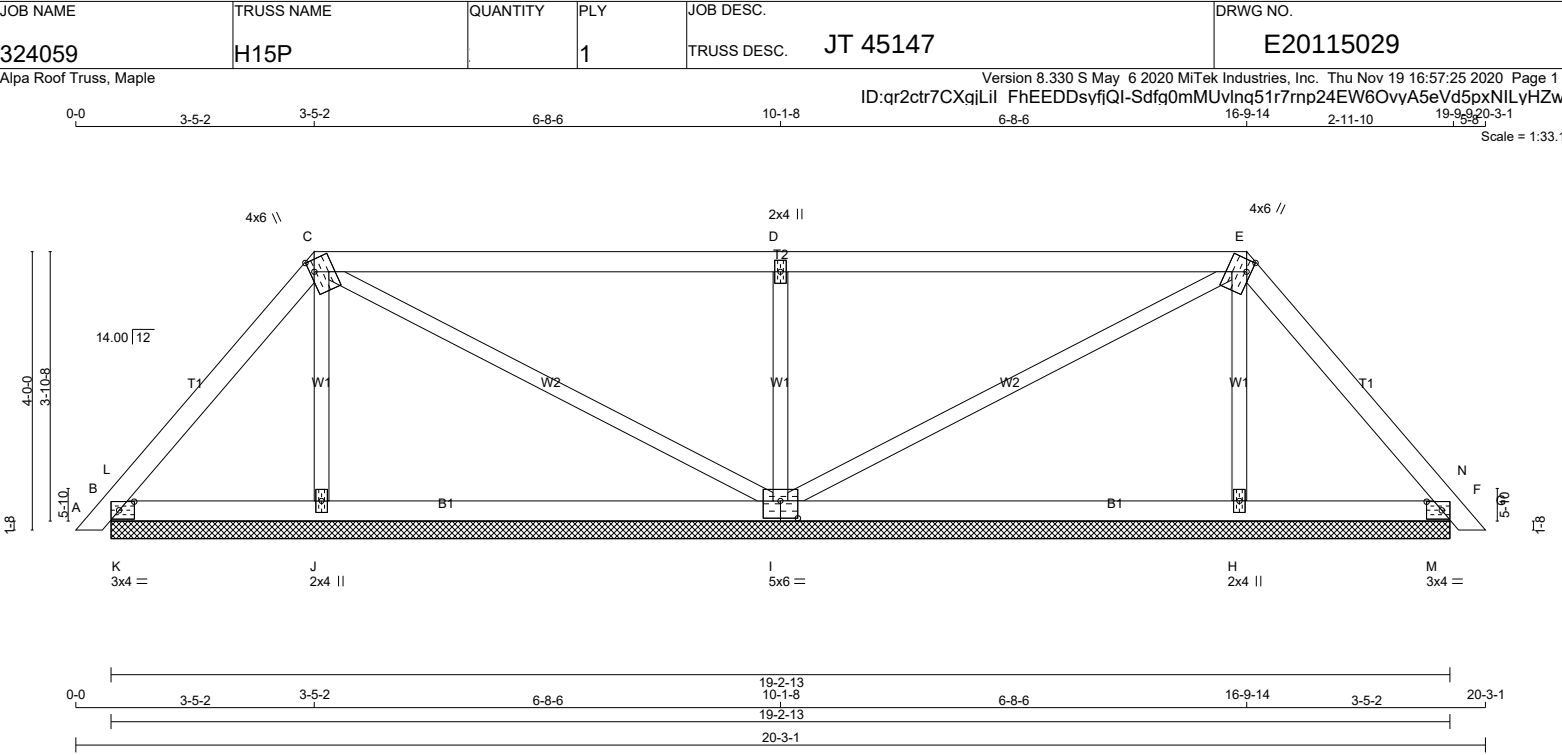
PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.90 (A) (INPUT = 0.90)
JSI METAL= 0.61 (A) (INPUT = 1.00)

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H14P		1	TRUSS DESC. JT 45147	E20115028



LUMBER 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 B - I 2x4 DRY No.2 SPF I - F 2x4 DRY No.2 SPF ALL WEBS 2x3 DRY No.2 SPF DRY: SEASONED LUMBER.										DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER BEARINGS FACTORED GROSS REACTION MAXIMUM FACTORED GROSS REACTION INPUT REQRD JT VERT HORZ DOWN HORZ UPLIFT IN-SX IN-SX B 111 0 111 0 -25 19-2-13 (9-7-7)5-9 J 404 0 404 0 0 19-2-13 (9-7-7)5-9 I 889 0 889 0 0 19-2-13 (9-7-7)5-9 H 404 0 404 0 0 19-2-13 (9-7-7)5-9 F 111 0 111 0 -25 19-2-13 (9-7-7)5-9 VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH PROVIDE ANCHORAGE AT BEARING JOINT B FOR 150 LBS FACTORED UPLIFT PROVIDE ANCHORAGE AT BEARING JOINT F FOR 150 LBS FACTORED UPLIFT UNFACTORED REACTIONS 1ST LCASE MAX./MIN. COMPONENT REACTIONS JT COMBINED SNOW LIVE PERM.LIVE WIND DEAD SOIL B 71 89 / 0 0 / 0 0 / 0 0 / 0 0 / -18 0 / 0 J 299 122 / 0 0 / 0 0 / 0 0 / 0 176 / 0 0 / 0 I 627 419 / 0 0 / 0 0 / 0 0 / 0 209 / 0 0 / 0 H 299 122 / 0 0 / 0 0 / 0 0 / 0 176 / 0 0 / 0 F 71 89 / 0 0 / 0 0 / 0 0 / 0 0 / -18 0 / 0 BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, J, I, H, F BRACING TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 6.25 FT. MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED. ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE LATERALLY RESTRAINED. LOADING TOTAL LOAD CASES: (4) CHORDS MAX. FACTORED FORCE VERT. LOAD LC1 MAX. FACTORED FORCE VERT. LOAD LC1 MAX. FACTORED FORCE VERT. LOAD LC1 MEMB. (LBS) (PLF) CSI (LC) UNBRACED LENGTH FR-TO MEMB. MAX. FACTORED FORCE VERT. LOAD LC1 MAX. FACTORED FORCE VERT. LOAD LC1 FR-TO FROM TO CSI (LC) UNBRACED LENGTH FR-TO MEMB. MAX. FACTORED FORCE VERT. LOAD LC1 MAX. FACTORED FORCE VERT. LOAD LC1 A-B 0 / 11 -78.0 -78.0 0.01 (1) 10.00 J-C -215 / 0 0.03 (1) B-L 0 / 118 -78.0 -78.0 0.08 (4) 10.00 C-I -22 / 0 0.03 (1) L-C -82 / 0 -78.0 -78.0 0.05 (4) 6.25 I-D -764 / 0 0.12 (1) C-D -11 / 3 -78.0 -78.0 0.82 (1) 6.25 I-E -22 / 0 0.03 (1) D-E -11 / 3 -78.0 -78.0 0.82 (1) 6.25 H-E -215 / 0 0.03 (1) E-N -82 / 0 -78.0 -78.0 0.05 (4) 6.25 K-L -243 / 0 0.00 (1) N-F 0 / 118 -78.0 -78.0 0.08 (4) 10.00 M-N -243 / 0 0.00 (1) J-I -1 / 33 -18.5 -18.5 0.27 (4) 10.00 I-H -1 / 33 -18.5 -18.5 0.27 (4) 10.00 H-M 0 / 43 -18.5 -18.5 0.27 (4) 10.00 M-F 0 / 43 -18.5 -18.5 0.05 (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 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 CSI: TC=0.82/1.00 (C-D:1) , BC=0.27/1.00 (J-K:4) , WB=0.12/1.00 (D-I:1) , SSI=0.30/1.00 (C-D:1) DOL LUMBER=1.00 NAIL=1.00 LS BEND=1.10 COMP=1.10 SHEAR=1.10 TENS= 1.10 COMPANION LIVE LOAD FACTOR = 1.00 TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT . NAIL VALUES PLATE GRIP(DRY) SHEAR SECTION (PSI) (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= 0.59 (E) (INPUT = 0.90) JSI METAL= 0.38 (I) (INPUT = 1.00)									
PLATES (table is in inches) JT TYPE PLATES W LEN Y X B TMB1-I MT20 3.0 4.0 1.50 2.50 C TTWW+m MT20 5.0 6.0 Edge 4.00 D TMW+w MT20 2.0 4.0 E TTWW+m MT20 5.0 6.0 Edge 4.00 F TMB1-I MT20 3.0 4.0 1.50 2.50 H BMW1+w MT20 2.0 4.0 I BSWWW1-I MT20 5.0 8.0 3.00 4.00 J BMW1+w MT20 2.0 4.0 Edge - INDICATES REFERENCE CORNER OF PLATE TOUCHES EDGE OF CHORD.																													
LATERAL BRACE(S) SHOWN SHALL BE 2X4 SPF#2																													
																													



LUMBER					
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	
B - I	2x4	DRY	No.2	SPF	
I - F	2x4	DRY	No.2	SPF	
ALL WEBS		2x3	DRY	No.2	SPF
DRY: SEASONED LUMBER.					

PLATES (table is in inches)					
JT	TYPE	PLATES	W	LEN	Y X
B	TMB1-I	MT20	3.0	4.0	1.50 2.50
C	TTWW+m	MT20	4.0	6.0	2.00 0.75
D	TMW+w	MT20	2.0	4.0	
E	TTWW+m	MT20	4.0	6.0	2.00 0.75
F	TMB1-I	MT20	3.0	4.0	1.50 2.50
H	BMW1+w	MT20	2.0	4.0	
I	BSWWW1-I	MT20	5.0	6.0	3.00 3.00
J	BMW1+w	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		
B	232	0	232	0	0	19-2-13 (9-7-7)9-12
J	330	0	330	0	0	19-2-13 (9-7-7)9-12
I	795	0	795	0	0	19-2-13 (9-7-7)9-12
H	330	0	330	0	0	19-2-13 (9-7-7)9-12
F	232	0	232	0	0	19-2-13 (9-7-7)9-12

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

UNFACTORED REACTIONS							
JT	1ST LCASE	MAX./MIN. COMPONENT REACTIONS					
		COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD
B	160	126 / 0	0 / 0	0 / 0	0 / 0	34 / 0	0 / 0
J	243	107 / 0	0 / 0	0 / 0	0 / 0	136 / 0	0 / 0
I	561	375 / 0	0 / 0	0 / 0	0 / 0	185 / 0	0 / 0
H	243	107 / 0	0 / 0	0 / 0	0 / 0	136 / 0	0 / 0
F	160	126 / 0	0 / 0	0 / 0	0 / 0	34 / 0	0 / 0

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

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

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

LOADING
TOTAL LOAD CASES: (4)

CHORDS				WEBS			
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	MAX. LC1 (LC)	MEMB.	MAX. FACTORED FORCE (LBS)	MAX. UNBRACED LENGTH	MAX. FACTORED CSI (LC)
FR-TO		FROM TO		FR-TO			
A-B	0 / 11	-78.0 -78.0	0.01 (1)	J-C	-181 / 0	10.00	0.04 (1)
B-L	0 / 74	-78.0 -78.0	0.07 (1)	C-I	-50 / 0	10.00	0.06 (1)
L-C	-122 / 0	-78.0 -78.0	0.07 (1)	I-D	-652 / 0	6.25	0.15 (1)
C-D	-21 / 0	-78.0 -78.0	0.59 (1)	I-E	-50 / 0	6.25	0.06 (1)
D-E	-21 / 0	-78.0 -78.0	0.59 (1)	H-E	-181 / 0	6.25	0.04 (1)
E-N	-122 / 0	-78.0 -78.0	0.07 (1)	K-L	-340 / 0	6.25	0.00 (1)
N-F	0 / 74	-78.0 -78.0	0.07 (1)	M-N	-340 / 0	10.00	0.00 (1)
F-G	0 / 11	-78.0 -78.0	0.01 (1)				

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

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, NBC 2015

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

(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=0.59/1.00 (D-E:1), BC=0.19/1.00 (J-K:4), WB=0.15/1.00 (D-I:1), SSI=0.25/1.00 (C-D:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

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

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

PLATE PLACEMENT TOL. = 0.250 inches

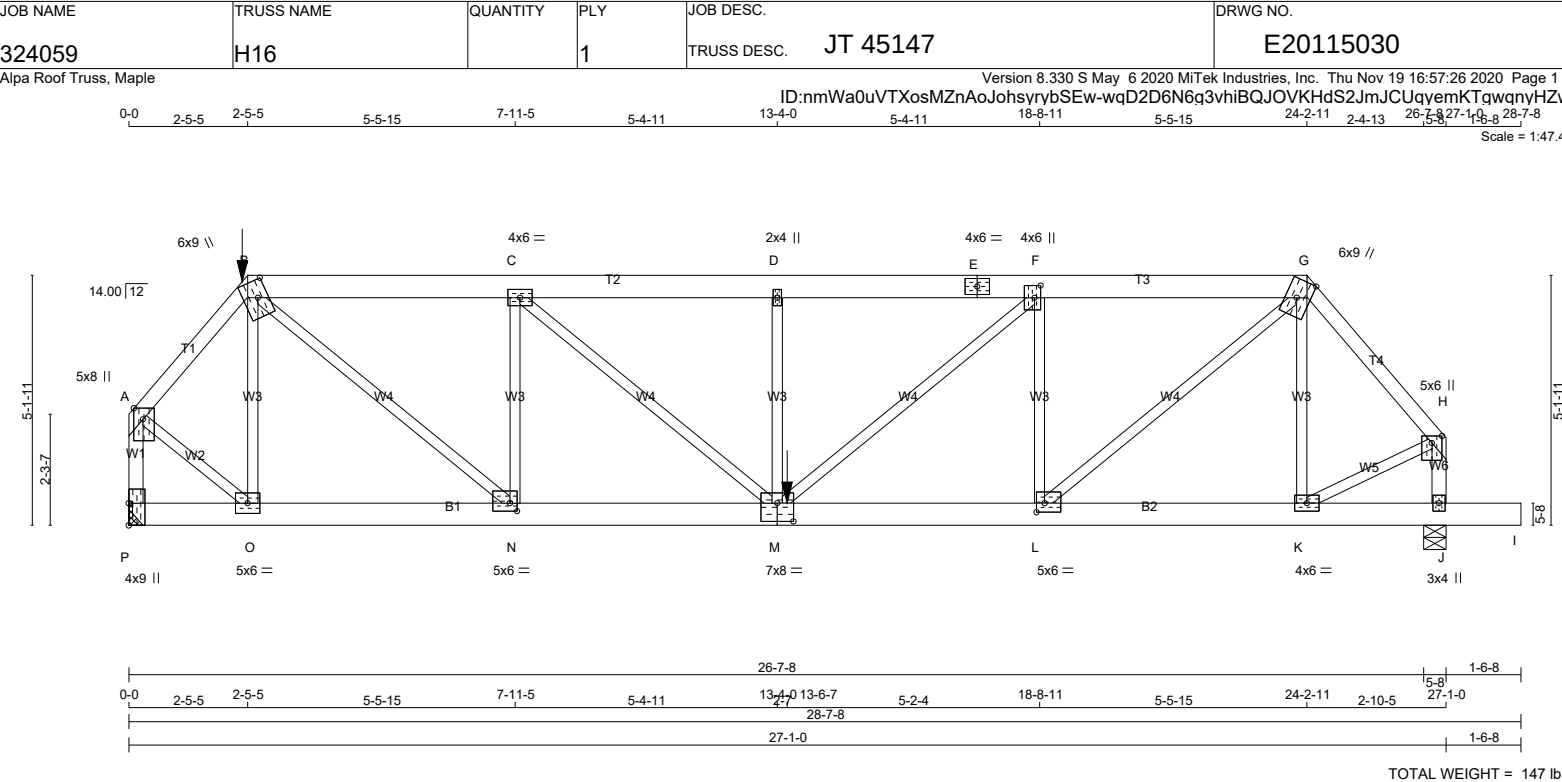
PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.89 (C) (INPUT = 0.90)
JSI METAL= 0.34 (I) (INPUT = 1.00)

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

FR-TO	0 / 11	-10.3 -10.3	0.19 (4)	10.00
M-F	0 / 71	-18.5 -18.5	0.09 (1)	10.00





LUMBER			
N. L. G. A. RULES			
CHORDS	SIZE	LUMBER	DESCR.
A - B	2x4	DRY	No.2
B - E	2x6	DRY	No.2
E - G	2x6	DRY	No.2
G - H	2x4	DRY	No.2
P - A	2x4	DRY	No.2
J - H	2x4	DRY	No.2
P - M	2x6	DRY	No.2
M - I	2x6	DRY	No.2
ALL WEBS	2x3	DRY	No.2
EXCEPT			SPF
DRY: SEASONED LUMBER.			

PLATES (table is in inches)					
JT	TYPE	PLATES	W	LEN	Y X
A	TMVW+p	MT20	5.0	8.0	2.75 Edge
B	TTWW+m	MT20	6.0	9.0	4.25 2.50
C	TMWW-t	MT20	4.0	6.0	
D	TMW+w	MT20	2.0	4.0	
E	TS-t	MT20	4.0	6.0	
F	TMWW+t	MT20	4.0	6.0	3.00 1.50
G	TTWW+m	MT20	6.0	9.0	Edge 3.25
H	TMVW+p	MT20	5.0	6.0	1.75 2.50
J	BMV1+p	MT20	3.0	4.0	
K	BMWW-t	MT20	4.0	6.0	
L	BMWW-t	MT20	5.0	6.0	2.25 2.00
M	BSWWW-l	MT20	7.0	8.0	4.50 4.00
N	BMWW-t	MT20	5.0	6.0	2.00 1.75
O	BMWW-t	MT20	5.0	6.0	
P	BMV1+t	MT20	4.0	9.0	5.50

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

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



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	
JT		VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	
P		2804	0	2804	0	0	MECHANICAL		
J		2356	0	2356	0	0	5-8	4-0	

A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED AT JOINT P. MINIMUM BEARING LENGTH AT JOINT P = 3-8.

UNFACTORED REACTIONS

1ST LCASE		MAX./MIN. COMPONENT REACTIONS					
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL
P	1989	1271 / 0	0 / 0	0 / 0	0 / 0	719 / 0	0 / 0
J	1669	1080 / 0	0 / 0	0 / 0	0 / 0	589 / 0	0 / 0

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

BRACING

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 3.59 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.	FORCE (LBS)	VERT. LOAD (PLF)	MAX. CSI (LC)	MEMB.	FORCE (LBS)	MAX. CSI (LC)	
FR-TO		FROM	TO	FR-TO			
A - B	-2208 / 0	-78.0	-78.0 0.16 (1)	4.43	O - B	-825 / 0	0.29 (1)
B - C	-3680 / 0	-153.5	-153.5 0.44 (1)	4.01	B - N	0 / 2971	0.74 (1)
C - D	-4565 / 0	-153.5	-153.5 0.49 (1)	3.59	N - C	-1743 / 0	0.62 (1)
D - E	-4565 / 0	-78.0	-78.0 0.29 (1)	3.84	C - M	0 / 1171	0.29 (1)
E - F	-4565 / 0	-78.0	-78.0 0.29 (1)	3.84	M - D	-558 / 0	0.20 (1)
F - G	-3262 / 0	-78.0	-78.0 0.23 (1)	4.49	M - F	0 / 1725	0.43 (1)
G - H	-1985 / 0	-78.0	-78.0 0.19 (1)	4.60	L - F	-1601 / 0	0.57 (1)
P - A	-2806 / 0	0.0	0.0 0.36 (1)	5.08	L - G	0 / 2602	0.64 (1)
J - H	-2206 / 0	0.0	0.0 0.26 (1)	5.67	K - G	-471 / 0	0.17 (1)
					A - O	0 / 1772	0.44 (1)
					K - H	0 / 1420	0.35 (1)
P - O	0 / 0	-36.4	-36.4 0.10 (4)	10.00			
O - N	0 / 1419	-36.4	-36.4 0.27 (1)	10.00			
N - M	0 / 3680	-36.4	-36.4 0.57 (1)	10.00			

FACTORED CONCENTRATED LOADS (LBS)							
JT	LOC.	LC1	MAX-	MAX+	FACE	DIR.	TYPE
B	2-5-5	-139	-139	---	FRONT	VERT	TOTAL
M	13-6-7	-1199	-1199	---	FRONT	VERT	TOTAL

CONNECTION REQUIREMENTS

- 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/C

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

GIRDER TYPE: CPrimeHip
LEFT SETBACK = 2-5-5
RIGHT SETBACK = 2-10-5
END SETBACK = 5-10-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDTL LOADS BASED ON 55 % OF GSL.
LOADS APPLIED TO FIRST 13-6-7 OF SPAN
MEASURED FROM THE LEFT.

*** 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, NBC 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 (0.90")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.14")
ALLOWABLE DEFL.(TL)= L/360 (0.90")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.26")

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 (0.00")

CSI: TC=0.49/1.00 (C-D:1) , BC=0.57/1.00 (M-N:1) , WB=0.74/1.00 (B-N:1) , SSI=0.33/1.00 (B-C:1)

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

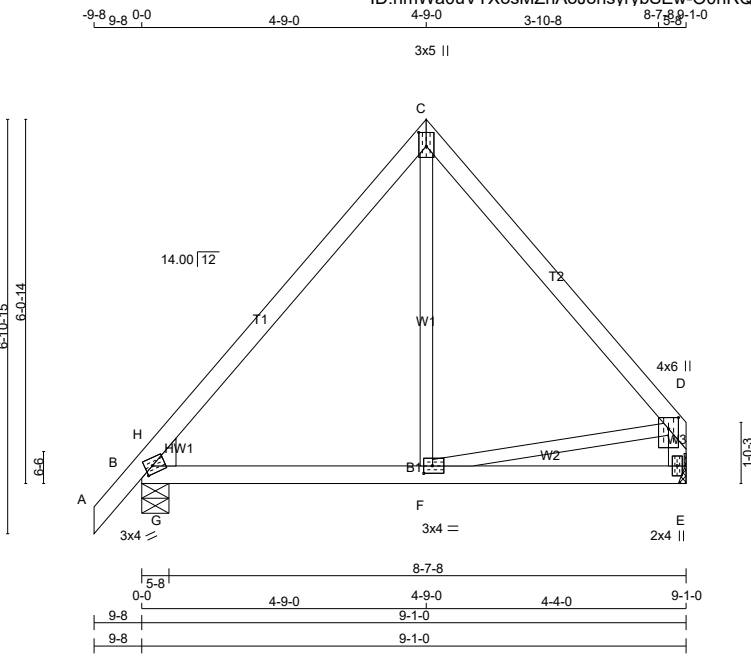
COMPANION LIVE LOAD FACTOR = 1.00

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H17		1	TRUSS DESC. JT 45147	E20115031

Alpa Roof Truss, Maple

ID:nmWa0uVTXosMZnAoJohsrybSEw-O0nRQSNkRM1YKL?VvCrW9fbXwjdRZajwZ7QTMEyHZws

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TOTAL WEIGHT = 2 X 37 = 75 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
E - D	2x4	DRY	No.2	SPF
B - E	2x4	DRY	No.2	SPF
ALL WEBS	2x3	DRY	No.2	SPF
EXCEPT				
DRY: SEASONED LUMBER.				

PLATES (table is in inches)					
JT	TYPE	PLATES	W	LEN	Y X
B	TMBH1-m	MT20	3.0	4.0	1.50 1.50
C	TTW+p	MT20	3.0	5.0	2.75 1.50
D	TMVW+p	MT20	4.0	6.0	2.25 2.00
E	BMV1+p	MT20	2.0	4.0	
F	BMWW-t	MT20	3.0	4.0	1.50 1.75

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

FACTORED GROSS REACTION			MAXIMUM FACTORED GROSS REACTION			INPUT BRG	REQRD BRG	HEEL
JT	VERT	HORZ	DOWN	HORZ	UPLIFT	IN-SX	IN-SX	WEDGE
B	508	0	508	0	0	5-8	1-8	2x6 L
E	438	0	438	0	0	MECHANICAL		

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

UNFACTORED REACTIONS

JT	1ST LCASE	MAX./MIN. COMPONENT REACTIONS					
B	COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL
B	361	229 / 0	0 / 0	0 / 0	0 / 0	133 / 0	0 / 0
E	312	191 / 0	0 / 0	0 / 0	0 / 0	122 / 0	0 / 0

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

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)	MAX. UNBRAC LENGTH	MEMB.	MAX. FACTORED FORCE (LBS)	MAX CSI (LC)
FR-TO		FROM	TO		FR-TO		
A-B	0 / 25	-78.0	-78.0 0.05 (1)	10.00	F-C	0 / 117	0.04 (4)
B-H	-128 / 0	-78.0	-78.0 0.09 (1)	6.25	F-D	0 / 190	0.04 (1)
H-C	-304 / 0	-78.0	-78.0 0.21 (1)	6.25	G-H	-388 / 0	0.00 (1)
C-D	-288 / 0	-78.0	-78.0 0.19 (1)	6.25			
E-D	-416 / 0	0.0	0.0 0.04 (1)	7.81			
B-G	0 / 188	-18.5	-18.5 0.20 (1)	10.00			
G-F	0 / 188	-18.5	-18.5 0.20 (1)	10.00			
F-E	0 / 0	-18.5	-18.5 0.11 (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 (0.30")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.02")
ALLOWABLE DEFL.(TL)= L/360 (0.30")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.04")

CSI: TC=0.21/1.00 (C-H:1) , BC=0.20/1.00 (F-G:1) , WB=0.04/1.00 (D-F:1) , SSI=0.30/1.00 (B-G: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= 0.44 (B) (INPUT = 0.90)
JSI METAL= 0.14 (D) (INPUT = 1.00)

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

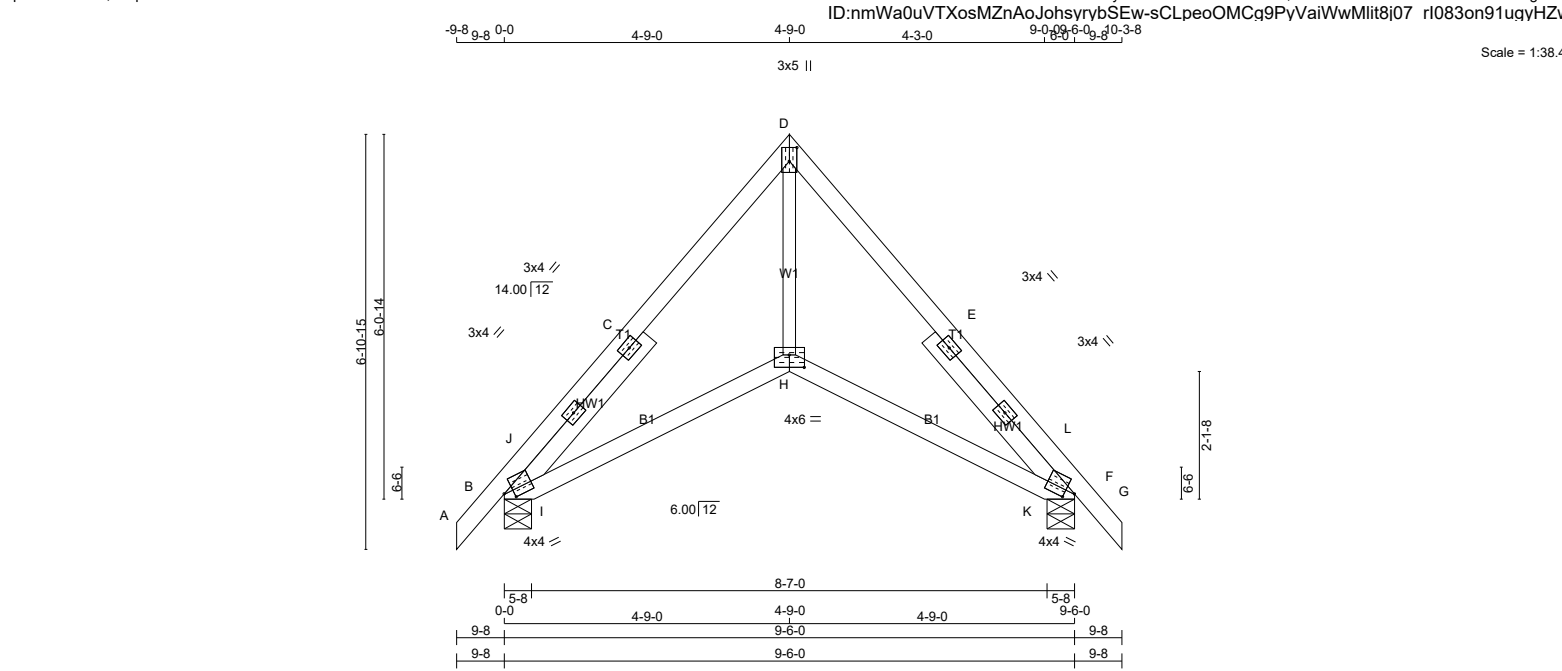


JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H17T		1	TRUSS DESC. JT 45147	E20115032

Alpa Roof Truss, Maple

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ID:nmWa0uVTXosMZnAoJohsyrybSEw-sCLpeoOMCq9PyVaiWwMlit8j07 r1083on91uqyHZwr



LUMBER			DIMENSIONS, SUPPORTS AND LOADINGS SPECIFIED BY FABRICATOR TO BE VERIFIED BY BUILDING DESIGNER			DESIGN CRITERIA		
N. L. G. A. RULES			BEARINGS			SPECIFIED LOADS:		
CHORDS	SIZE	LUMBER	DESCR.	FACTORED	MAXIMUM FACTORED	INPUT	REQRD	
A - D	2x4	DRY	No.2	SPF	GROSS REACTION	DOWN	BRG	
B - H	2x4	DRY	No.2	SPF	VERT	HORZ	IN-SX	
D - G	2x4	DRY	No.2	SPF	JT			
B - H	2x4	DRY	No.2	SPF	B	529	0	5-8
H - F	2x4	DRY	No.2	SPF	F	529	0	5-8
REINFORCING MEMBERS			UNFACTORED REACTIONS			SPACING = 24.0 IN. C/C		
HW1	2x4	DRY	No.2	SPF	1ST LCASE	MAX./MIN. COMPONENT REACTIONS	THIS TRUSS IS DESIGNED FOR RESIDENTIAL	
HW2	2x4	DRY	No.2	SPF	JT	COMBINED	SNOW	OR SMALL BUILDING REQUIREMENTS OF PART
ALL WEBS 2x3 DRY: SEASONED LUMBER.			BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, F			THIS DESIGN COMPLIES WITH:		
			BRACING			- PART 9 OF BCBC 2018 , ABC 2019		
			TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 6.25 FT.			- PART 9 OF OBC 2012 (2019 AMENDMENT)		
			MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.			- CSA 086-14		
			ALL PITCH BREAKS AND PERIMETER CORNER JOINTS MUST BE Laterally RESTRAINED.			- TPIC 2014		
			LOADING			(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		
			TOTAL LOAD CASES: (4)			ALLOWABLE DEFL.(LL)= L/360 (0.32")		
						CALCULATED VERT. DEFL.(LL) = L/ 999 (0.02")		
						ALLOWABLE DEFL.(TL)= L/360 (0.32")		
						CALCULATED VERT. DEFL.(TL) = L/ 999 (0.05")		
						CSI: TC=0.19/1.00 (D-J:1) , BC=0.19/1.00 (H-I:1) ,		
						WB=0.10/1.00 (D-H:1) , SSI=0.13/1.00 (B-I: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= 0.60 (H) (INPUT = 0.90)		
						JSI METAL= 0.12 (F) (INPUT = 1.00)		

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



Scale = 1:35.5

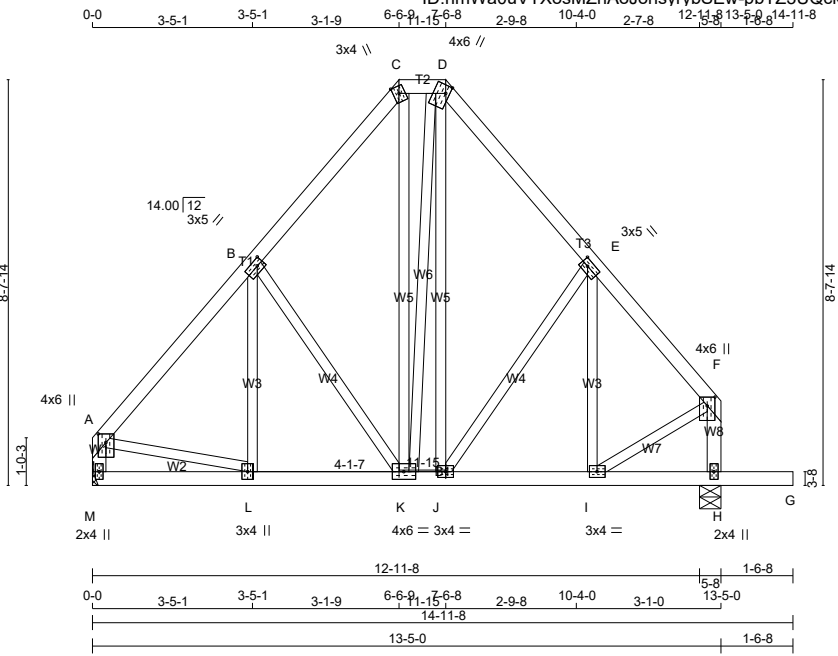
CONTINUED ON PAGE 2

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H19		1	TRUSS DESC. JT 45147	E20115034

Alpa Roof Truss, Maple

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ID:nmWa0uVTXosMznAoJohsrybSEw-pbTZ3UQckHP7Boj4dKPDnID4jwfqmwLMF5e7zZyHZwp



TOTAL WEIGHT = 83 lb

[M][F]

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
H - F	2x4	DRY	No.2	SPF
M - A	2x4	DRY	No.2	SPF
M - G	2x4	DRY	No.2	SPF

ALL WEBS 2x3 DRY No.2 SPF

EXCEPT

DRY: SEASONED LUMBER.

PLATES (table is in inches)				
JT TYPE	PLATES	W	LEN	Y X
A	TMVW+p	MT20	4.0	6.0 2.25 2.00
B	TMWW-t	MT20	3.0	5.0 1.50 1.75
C	TTW+m	MT20	3.0	4.0 Edge
D	TTWW+m	MT20	4.0	6.0 2.00 1.00
E	TMWW-t	MT20	3.0	5.0 1.50 1.75
F	TMVW+p	MT20	4.0	6.0 2.25 2.00
H	BMV1+p	MT20	2.0	4.0
I	BMWW-t	MT20	3.0	4.0
J	BMWW-t	MT20	3.0	4.0
K	BMWWW-t	MT20	4.0	6.0
L	BMWW+t	MT20	3.0	4.0
M	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

BEARINGS		FACTORED	MAXIMUM FACTORED	INPUT	REQRD
		GROSS REACTION	GROSS REACTION	BRG	BRG
JT	VERT	HORZ	DOWN	HORZ	UPLIFT
M	647	0	647	0	0
H	796	0	796	0	0

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

UNFACTORED REACTIONS		1ST LCASE	MAX./MIN. COMPONENT REACTIONS					
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL	
M	461	282 / 0	0 / 0	0 / 0	0 / 0	180 / 0	0 / 0	
H	567	346 / 0	0 / 0	0 / 0	0 / 0	221 / 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)

CHORDS		MAX. FACTORED	FACTORED	MAX. FACTORED	MAX. FACTORED	MAX. FACTORED	MAX. FACTORED	MAX. FACTORED
MEMB.	FORCE (LBS)	VERT. LOAD (PLF)	LC1 MAX	LC1 MAX	UNBRAC	MEMB.	FORCE (LBS)	MAX
FR-TO		FROM TO	CSI (LC)	MAX.	LENGTH	FR-TO		CSI (LC)
A - B	-562 / 0	-78.0 -78.0	0.11 (1)	6.25	K - C	0 / 178	0.04 (1)	
B - C	-426 / 0	-78.0 -78.0	0.11 (1)	6.25	K - D	0 / 50	0.01 (1)	
C - D	-262 / 0	-78.0 -78.0	0.01 (1)	6.25	J - D	0 / 117	0.03 (1)	
D - E	-415 / 0	-78.0 -78.0	0.09 (1)	6.25	A - L	0 / 387	0.09 (1)	
E - F	-478 / 0	-78.0 -78.0	0.09 (1)	6.25	L - B	-7 / 49	0.02 (4)	
H - F	-627 / 0	0.0 0.0	0.07 (1)	7.81	B - K	-210 / 0	0.11 (1)	
M - A	-620 / 0	0.0 0.0	0.06 (1)	7.81	J - E	-122 / 0	0.07 (1)	
					I - E	-106 / 6	0.04 (1)	
					I - F	0 / 367	0.08 (1)	
M - L	0 / 0	-18.5 -18.5	0.04 (4)	10.00				
L - K	0 / 380	-18.5 -18.5	0.08 (1)	10.00				
K - J	0 / 257	-18.5 -18.5	0.06 (1)	10.00				
J - I	0 / 325	-18.5 -18.5	0.07 (1)	10.00				
L - 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

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, NBC 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 (0.45")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")
ALLOWABLE DEFL.(TL)= L/360 (0.45")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")

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=0.16/1.00 (G-H:1) , WB=0.11/1.00 (B-K:1) , SSI=0.12/1.00 (G-H:1)

DOL LUMBER=1.00 NAIL=1.00 LBS 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 (PSI)	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= 0.79 (L) (INPUT = 0.90)
JSI METAL= 0.22 (L) (INPUT = 1.00)

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

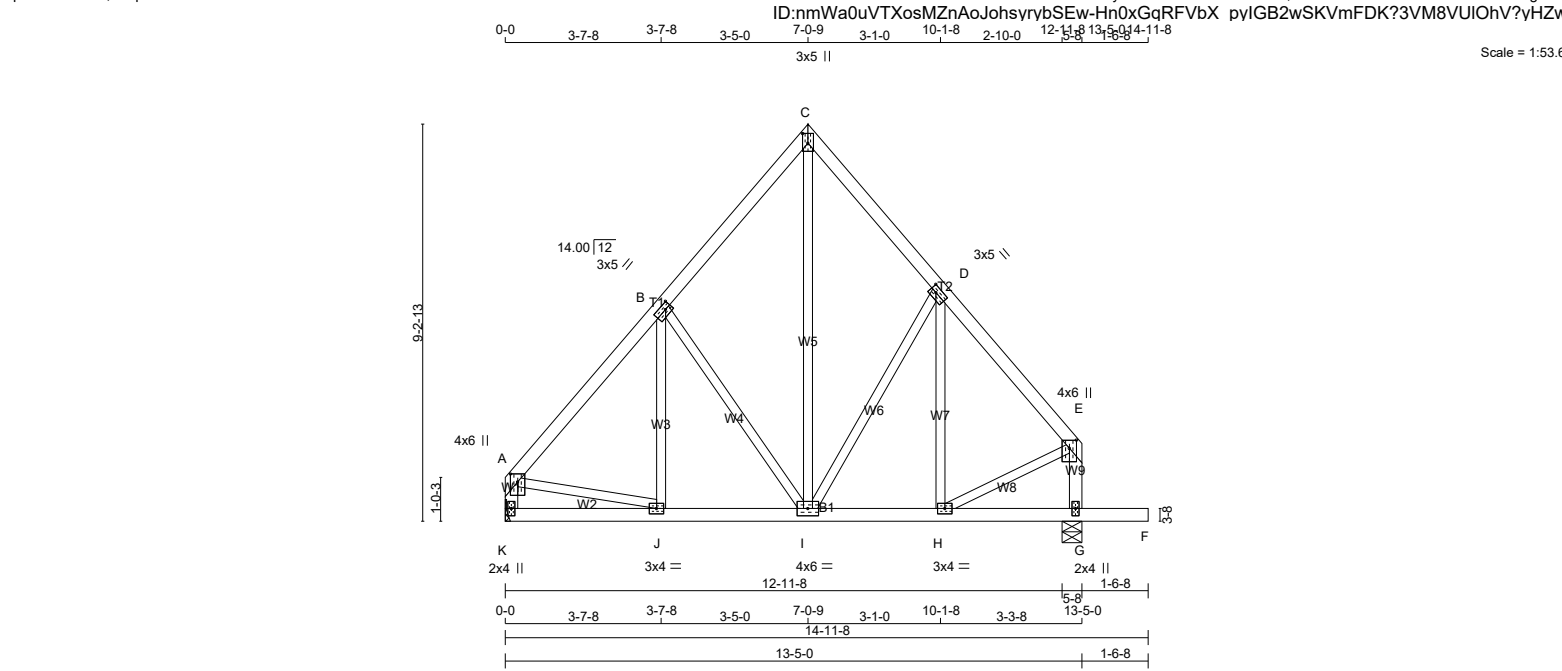


JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	H20		1	TRUSS DESC. JT 45147	E20115035

Alpa Roof Truss, Maple

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ID:nmWa0uVTXosMZnAoJohsryrybSEw-Hn0xGqRFVbX pyIGB2wSKVmFDK?3VM8VUIOhV?yHZwo



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

DRY: SEASONED LUMBER.

PLATES (table is in inches)						
JT	TYPE	PLATES	W	LEN	Y	X
A	TMVW+p	MT20	4.0	6.0	2.25	2.00
B	TMWW-t	MT20	3.0	5.0	1.50	1.75
C	TTW+p	MT20	3.0	5.0	2.75	1.50
D	TMWW-t	MT20	3.0	5.0	1.50	1.75
E	TMVW+p	MT20	4.0	6.0	2.25	2.00
G	BMV1+p	MT20	2.0	4.0		
H	BMWW-t	MT20	3.0	4.0		
I	BMWWW-t	MT20	4.0	6.0		
J	BMWW-t	MT20	3.0	4.0		
K	BMV1+p	MT20	2.0	4.0		

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



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

BEARINGS		FACTORED	MAXIMUM	FACTORED	INPUT	REQRD
		GROSS REACTION	GROSS REACTION	DOWN	BRG	BRG
JT	VERT	HORZ	HORZ	HORZ	UPLIFT	IN-SX
K	647	0	647	0	0	MECHANICAL
G	796	0	796	0	5-8	1-8

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

UNFACTORED REACTIONS

1ST LCASE		MAX./MIN. COMPONENT REACTIONS					
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL
K	461	282 / 0	0 / 0	0 / 0	0 / 0	180 / 0	0 / 0
G	567	346 / 0	0 / 0	0 / 0	0 / 0	221 / 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: (4)

CHORDS				WEBS			
MEMB.	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	MAX LC1 CSI (LC)	MEMB.	MAX. FACTORED FORCE (LBS)	MAX LC1 CSI (LC)	
FR-TO		FROM TO		FR-TO			
A-B	-557 / 0	-78.0 -78.0	0.12 (1)	6.25	J-B	0 / 57	0.02 (4)
B-C	-403 / 0	-78.0 -78.0	0.12 (1)	6.25	B-I	-231 / 0	0.14 (1)
C-D	-400 / 0	-78.0 -78.0	0.10 (1)	6.25	I-C	0 / 383	0.09 (1)
D-E	-478 / 0	-78.0 -78.0	0.10 (1)	6.25	I-D	-158 / 0	0.10 (1)
K-A	-619 / 0	0.0 0.0	0.06 (1)	7.81	H-D	-77 / 19	0.04 (1)
G-E	-621 / 0	0.0 0.0	0.07 (1)	7.81	A-J	0 / 384	0.09 (1)
					H-E	0 / 355	0.08 (1)
K-J	0 / 0	-18.5 -18.5	0.05 (4)	10.00			
J-I	0 / 378	-18.5 -18.5	0.09 (4)	10.00			
I-H	0 / 325	-18.5 -18.5	0.07 (4)	10.00			
H-G	0 / 0	-18.5 -18.5	0.04 (4)	10.00			
G-F	0 / 0	-96.5 -96.5	0.16 (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

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

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

(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 (0.45")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")
ALLOWABLE DEFL.(TL)= L/360 (0.45")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.02")

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=0.12/1.00 (A-B:1) , BC=0.16/1.00 (F-G:1) , WB=0.14/1.00 (B-I:1) , SSI=0.12/1.00 (F-G: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

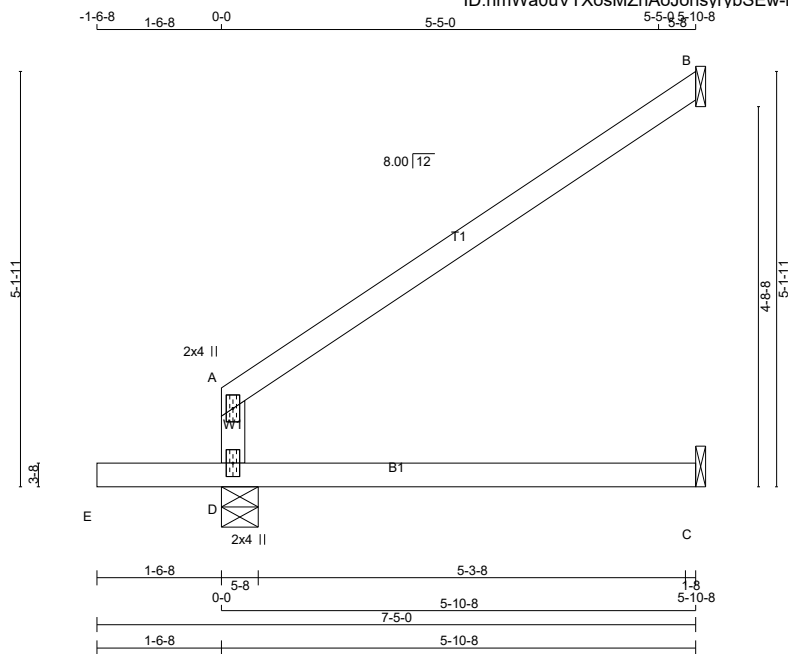
TRUSS PLATE MANUFACTURER IS NOT RESPONSIBLE FOR QUALITY CONTROL IN THE TRUSS MANUFACTURING PLANT .

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.65 (J) (INPUT = 0.90)
JSI METAL= 0.22 (A) (INPUT = 1.00)



TOTAL WEIGHT = 22 X 18 = 388 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	487	0	487	0	0	5-8	1-8
B	188	0	188	0	0	1-8	1-8
C	41	0	46	0	0	1-8	1-8

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

UNFACTORED REACTIONS

1ST LCASE		MAX./MIN. COMPONENT REACTIONS					
JT	COMBINED	SNOW	LIVE	PERM.LIVE	WIND	DEAD	SOIL
D	348	210 / 0	0 / 0	0 / 0	0 / 0	137 / 0	0 / 0
B	130	101 / 0	0 / 0	0 / 0	0 / 0	29 / 0	0 / 0
C	33	0 / 0	0 / 0	0 / 0	0 / 0	33 / 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: (4)

CHORDS				WEBS			
MEMB.	MAX. FACTORED (LBS)	FACTORED VERT. LOAD (PLF)	LC1 MAX CSI (LC)	MAX. UNBRAC LENGTH	MEMB.	MAX. FACTORED (LBS)	MAX CSI (LC)
FR-TO		FROM	TO		FR-TO		
D- A	-270 / 0	0.0	0.0	0.33 (1)			7.81
A- B	-23 / 0	-78.0	-78.0	0.33 (1)			6.25
E- D	0 / 0	-96.5	-96.5	0.16 (1)			10.00
D- C	0 / 0	-18.5	-18.5	0.19 (4)			10.00

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



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 (0.20")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.02")

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=0.33/1.00 (A-D:1), BC=0.19/1.00 (C-D:4),
WB=0.00/1.00 (n/a:0), SSI=0.18/1.00 (A-B:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE RIGHT HEEL ONLY

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

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.17 (A) (INPUT = 0.90)
JSI METAL= 0.14 (A) (INPUT = 1.00)

JOB NAME	TRUSS NAME	QUANTITY	PLY	JOB DESC.	DRWG NO.
324059	J02		1	TRUSS DESC. JT 45147	E20115037

Alpa Roof Truss, Maple

Version 8.330 S May 6 2020 MiTek Industries, Inc. Thu Nov 19 16:57:33 2020 Page 1

ID:qr2ctr7CXqjLiI FhEEDDsYfjQI-DA8ihVSV1Cnh2GSfJTywPwraO8h5zlsox3toatyHZwm

Scale = 1:35.0

TOTAL WEIGHT = 15 lb

LUMBER

N. L. G. A. RULES

CHORDS SIZE

D - A 2x4 DRY No.2

A - B 2x4 DRY No.2

E - C 2x4 DRY No.2

DESCR.

SPF

SPF

SPF

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

BEARINGS

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 B97791H FOR CONNECTION TO JOINT(S) B , C

UNFACTORED REACTIONS

JT	1ST LCASE	SNOW	MAX./MIN. LIVE	PERM.LIVE	WIND	DEAD	SOIL
D	262	158 / 0	0 / 0	0 / 0	0 / 0	104 / 0	0 / 0
B	89	70 / 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	MAX. FACTORED FORCE (LBS)	VERT. LOAD (PLF)	LC1 MAX (PLF)	LC1 MAX (PLF)	MAX. UNBRACED LENGTH	MEMB.	WEBS	MAX. FACTORED FORCE (LBS)	MAX. CSI (LC)
FR-TO							FR-TO			
D-A	-173 / 0	0.0	0.0	0.12 (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)	SHEAR	SECTION			
(PSI)	(PLI)	(PLI)	(PLI)			
MAX	MIN	MAX	MIN	MAX	MIN	
MT20	650	371	1747	788	1987	1873

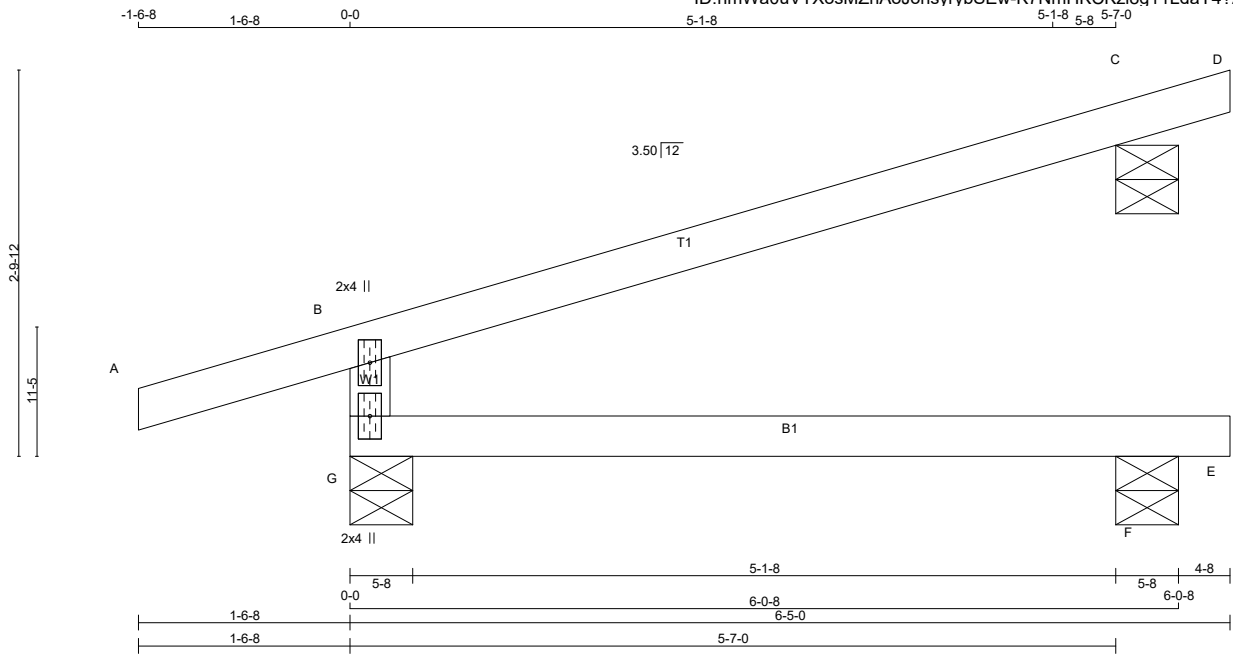
PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.14 (A) (INPUT = 0.90)

JSI METAL= 0.09 (A) (INPUT = 1.00)

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



TOTAL WEIGHT = 9 X 17 = 156 lb

LUMBER
N. L. G. A. RULES
CHORDS SIZE
A - D 2x4 DRY
G - B 2x4 DRY
G - E 2x4 DRY

LUMBER
No.2
No.2
No.2

DESCR.
SPF
SPF
SPF

DRY: SEASONED LUMBER.

PLATES (table is in inches)

JT	TYPE	PLATES	W	LEN	Y	X
B	TMV+p	MT20	2.0	4.0		
G	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		
G	470	0	470	0	5-8	1-8
F	55	0	61	0	5-8	1-8
C	220	0	220	0	5-8	5-8

BEVELED PLATE OR SHIM REQUIRED TO PROVIDE FULL BEARING SURFACE WITH TRUSS CHORD AT JT(S): C

UNFACTORED REACTIONS

JT	COMBINED	1ST LCASE	MAX./MIN. COMPONENT REACTIONS				
			SNOW	LIVE	PERM.LIVE	WIND	DEAD
G	333	219 / 0	0 / 0	0 / 0	0 / 0	0 / 0	114 / 0
F	44	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	44 / 0
C	152	119 / 0	0 / 0	0 / 0	0 / 0	0 / 0	34 / 0

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

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)

MEMB.	CHORDS		WEBS	
	MAX. FACTORED FORCE (LBS)	FACTORED VERT. LOAD (PLF)	MAX. FACTORED UNBRACED LENGTH (LC)	MAX. FACTORED FORCE (LBS)
FR-TO		FROM TO		FR-TO
A-B	0 / 17	-78.0 -78.0	0.14 (1)	10.00
B-C	-16 / 0	-78.0 -78.0	0.45 (1)	6.25
C-D	-7 / 0	-78.0 -78.0	0.02 (1)	10.00
G-B	-407 / 0	0.0 0.0	0.14 (4)	7.81
G-F	0 / 0	-18.5 -18.5	0.14 (4)	10.00
F-E	0 / 0	-18.5 -18.5	0.01 (4)	10.00

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.(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 (0.03")

CANTILEVER DEFLECTION:
ALLOWABLE DEFL.(TL)= L/120 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.00")

CSI: TC=0.45/1.00 (B-C:1) , BC=0.14/1.00 (F-G:4) ,
WB=0.00/1.00 (n/a:0) , SSI=0.21/1.00 (B-C:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE 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)
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= 0.21 (B) (INPUT = 0.90)
JSI METAL= 0.11 (B) (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:

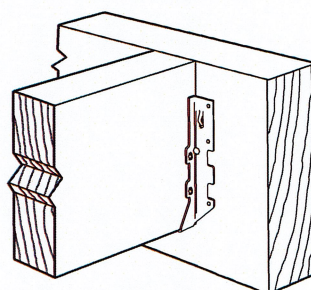
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

Installation:

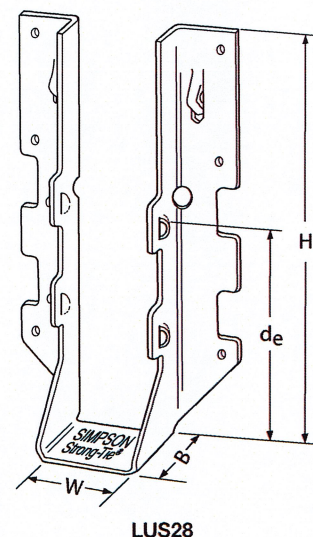
- Use all specified fasteners.
- Nails: 16d = 0.162" dia. x 3½" long common wire, 10d = 0.148" x 3" long common wire.
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.

Options:

- These hangers cannot be modified



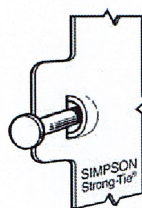
Typical LUS Installation



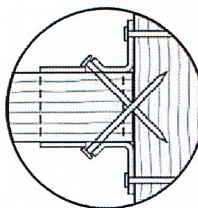
LUS28

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 _p =1.15)	Normal (K _p =1.00)	Uplift (K _p =1.15)	Normal (K _p =1.00)
LUS24	18	1½	3½	1¾	1 15/16	(4) 10d	(2) 10d	710	1630	645	1155
LUS24-2	18	3½	3½	2	1 13/16	(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	7 15/16	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:

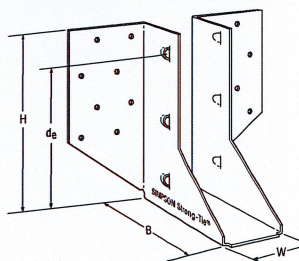
- Factored resistances are in accordance with CSA O86 -14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

Installation:

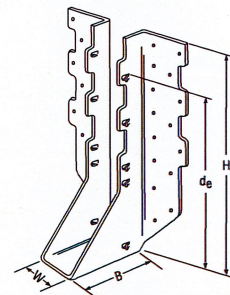
- Use all specified fasteners
- Nails: 16d = 0.162" dia. x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

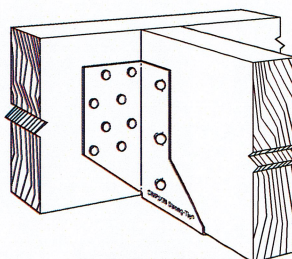
- See current catalogue for options



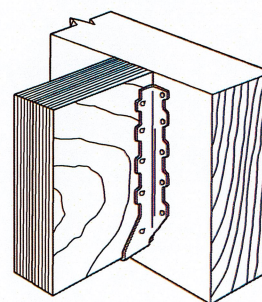
LJS26DS



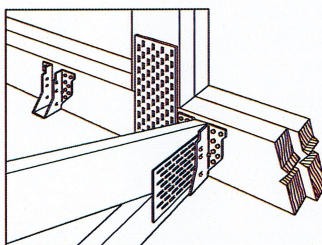
HUS210
(HUS26, HUS28, similar)



Typical LJS26DS
Installation



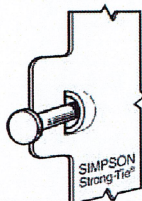
Typical HUS
Installation



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

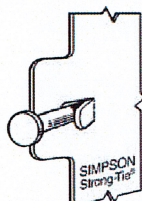
Model No.	Ga.	Dimensions (in.)				Fasteners		Factored Resistance (lb.)			
		W	H	B	d _e ¹	Face	Joist	D.Fir-L		S-P-F	
								Uplift (K ₀ =1.15) lb.	Normal (K ₀ =1.00) lb.	Uplift (K ₀ =1.15) lb.	Normal (K ₀ =1.00) lb.
LJS26DS	18	1½	5	3½	4⅞	(16) 16d	(6) 16d	2055	4265	1460	4115
HUS26	16	1⅝	5⅞	3	3½	(14) 16d	(6) 16d	2705	4940	2065	3875
HUS28	16	1⅝	7⅜	3	6⅜	(22) 16d	(8) 16d	3605	5365	2675	4345
HUS210	16	1⅝	9⅜	3	7⅜	(30) 16d	(10) 16d	4505	5795	4010	4740
HUS1.81/10	16	1⅜	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.

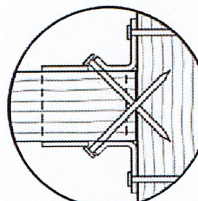


Dome Double Shear Nailing prevents tabs breaking off (available on some models).

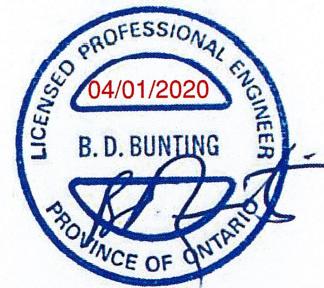
U.S. Patent 5,603,580



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



Double Shear Nailing Top View.



LIMIT
STATES
DESIGN

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-SPECHUS20 3/20 exp. 6/22

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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:

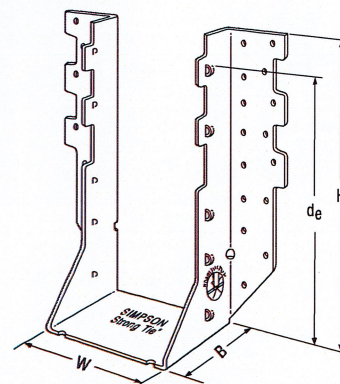
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

Installation:

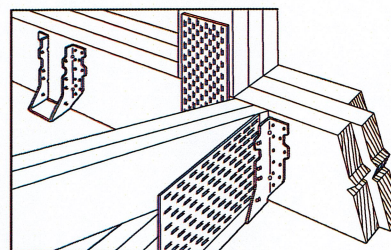
- Use all specified fasteners
- Nails: 16d = 0.162" dia. x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

Options:

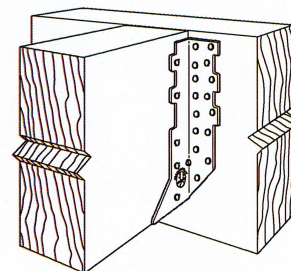
- See current catalogue for options



HHUS410



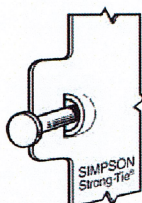
Typical HHUS Installation
(Truss Designer to provide fastener quantity for connecting multiple members together)



Typical HHUS Installation

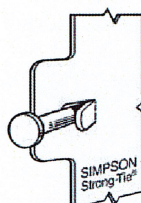
Model No.	Ga.	Dimensions (in.)				Fasteners		Factored Resistance (lb.)			
		W	H	B	d _e ¹	Face	Joist	D.Fir-L		S-P-F	
								Uplift (K _o =1.15)	Normal (K _o =1.00)	Uplift (K _o =1.15)	Normal (K _o =1.00)
HHUS26-2	14	3 5/16	5 13/16	3	3 15/16	(14) 16d	(6) 16d	2850	7335	2065	5205
HHUS28-2	14	3 5/16	7 1/2	3	6 5/32	(22) 16d	(8) 16d	3765	8940	2675	6345
HHUS210-2	14	3 5/16	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.

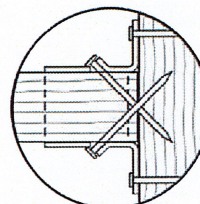


Dome Double Shear Nailing prevents tabs breaking off (available on some models).

U.S. Patent
5,603,580



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



Double Shear Nailing Top View.



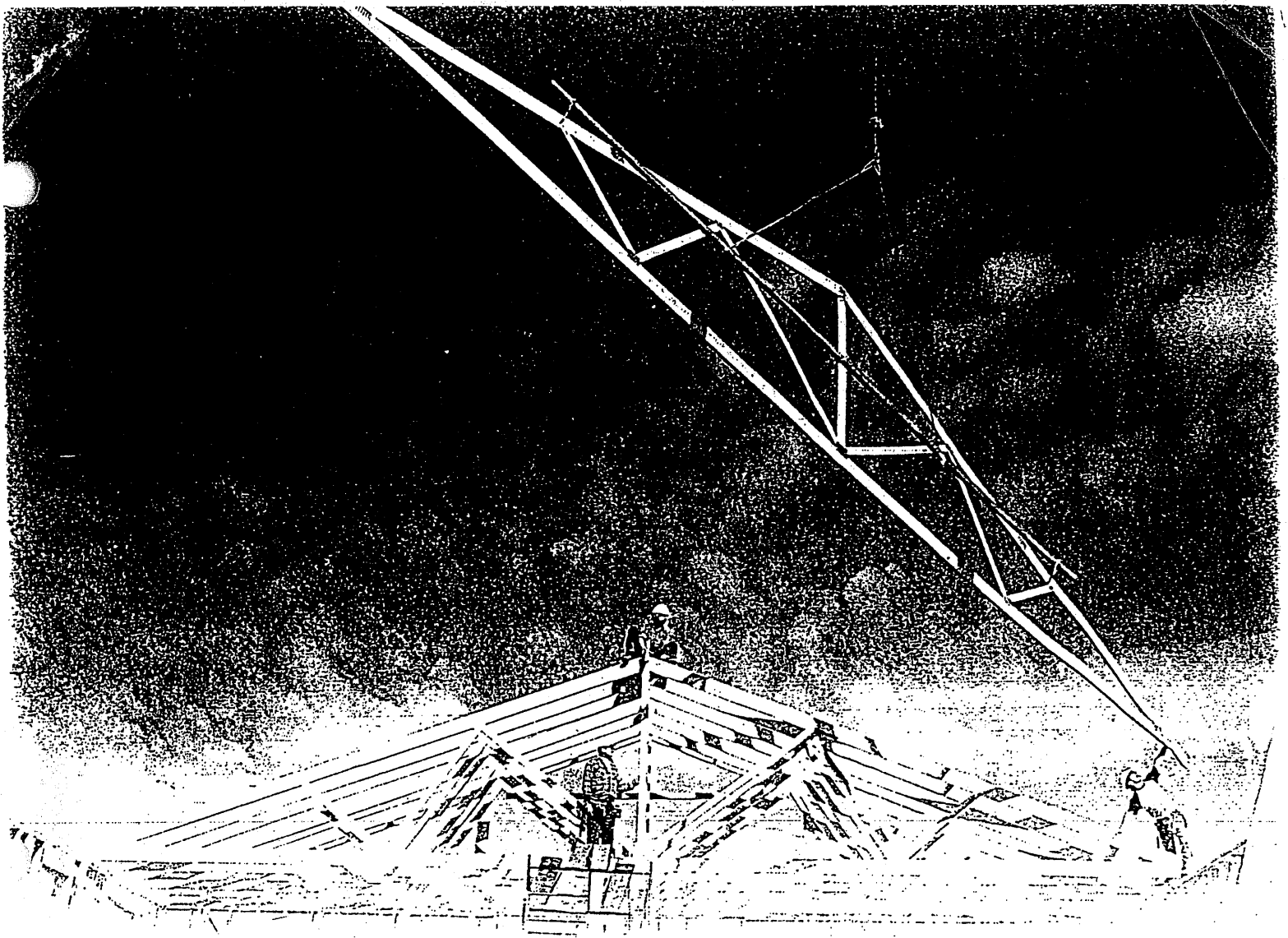
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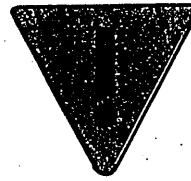
Wood Truss Installation

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

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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

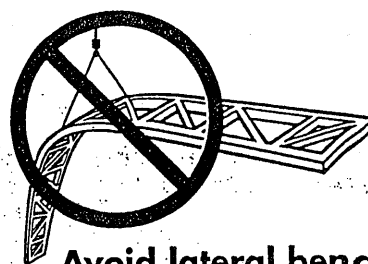
Special design requirements, such as wind bracing, portal bracing, seismic bracing, diaphragms, shear walls, or other load transfer elements and their connections to wood trusses must be considered separately by the building designer, who shall determine size, location, and method of connections for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

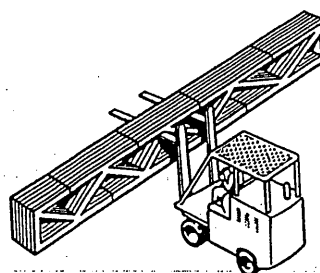
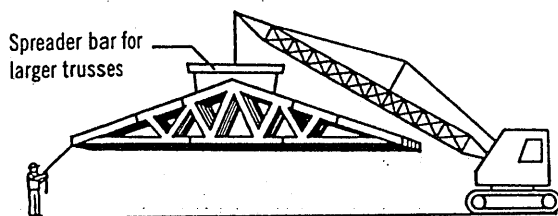


Avoid lateral bending

- 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.

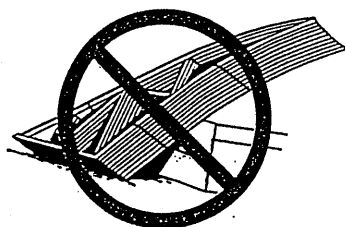
2

Job Site Handling



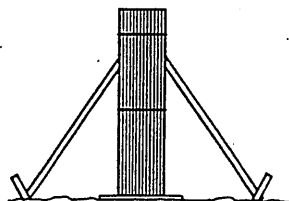
All trusses should be picked up at the top chords in a vertical position only

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.



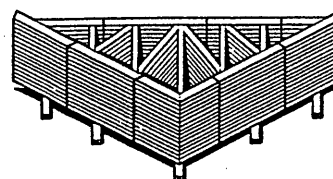
Do not store unbraced bundles upright

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.

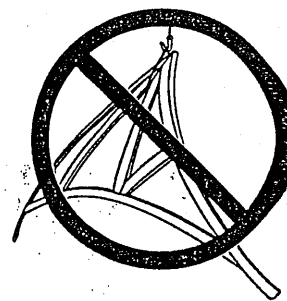


Care should be exercised when removing banding to avoid damaging trusses.

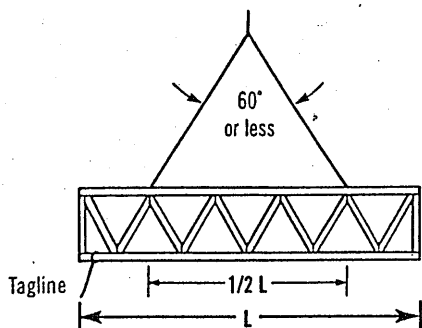
During long term storage, trusses shall be protected from the environment in a manner that provides for adequate ventilation of the trusses. If tarpaulins or other material is used, the ends shall be left open for ventilation. Plastic is not recommended, since it can trap moisture.

3 Hoisting

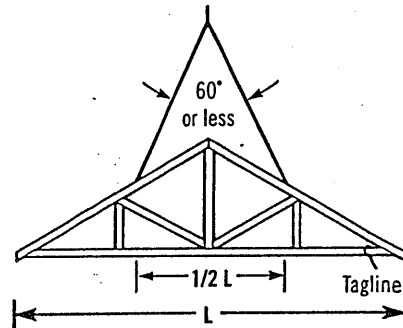
All trusses that are erected one at a time shall be held safely in position by the erection equipment until such time as all necessary bracing has been installed and the ends of the trusses are securely fastened to the building.



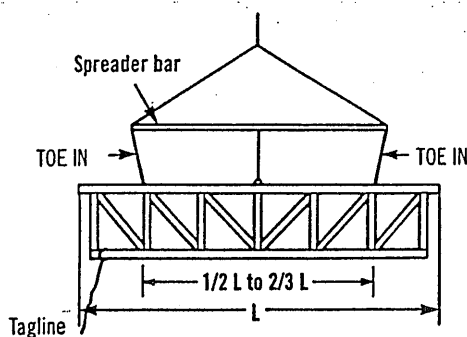
Avoid lateral bending



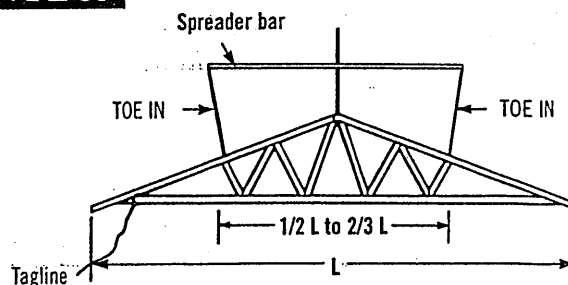
$L \leq 30'$



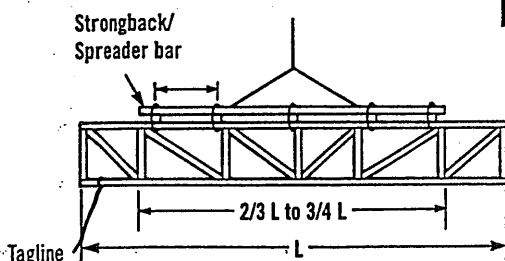
Truss sling is acceptable where these criteria are met.



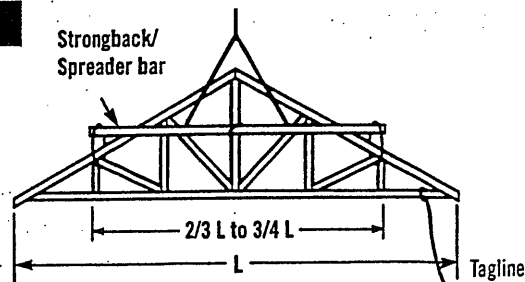
$30' < L \leq 60'$



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.



$L > 60'$



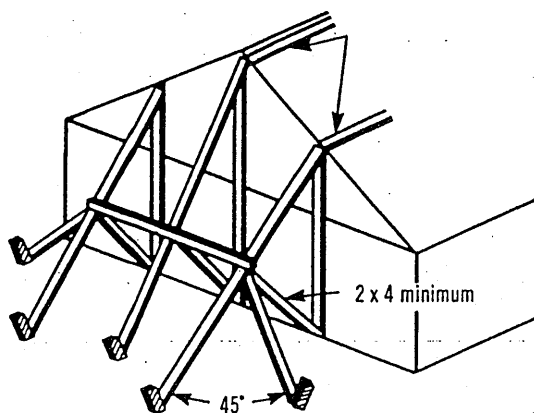
For lifting trusses with spans in excess of 60 feet, it is recommended that a strongback/spreader bar be used as illustrated. The strongback/spreader bar should be attached to the top chord and web members at intervals of approximately 10 feet. Further, the strongback/spreader bar should be at or above 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

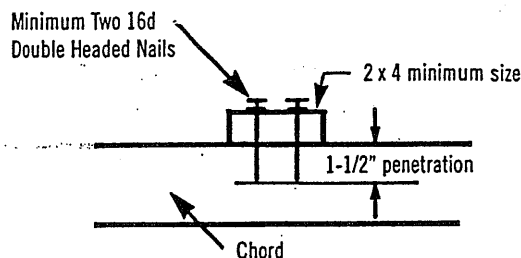
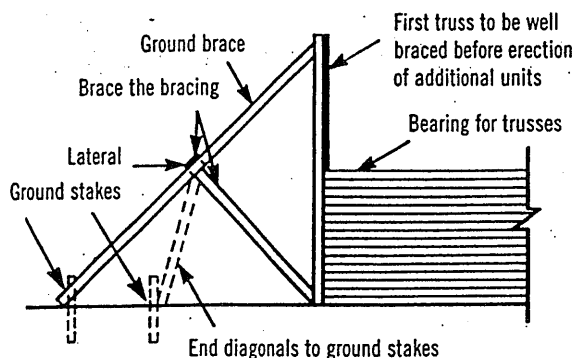
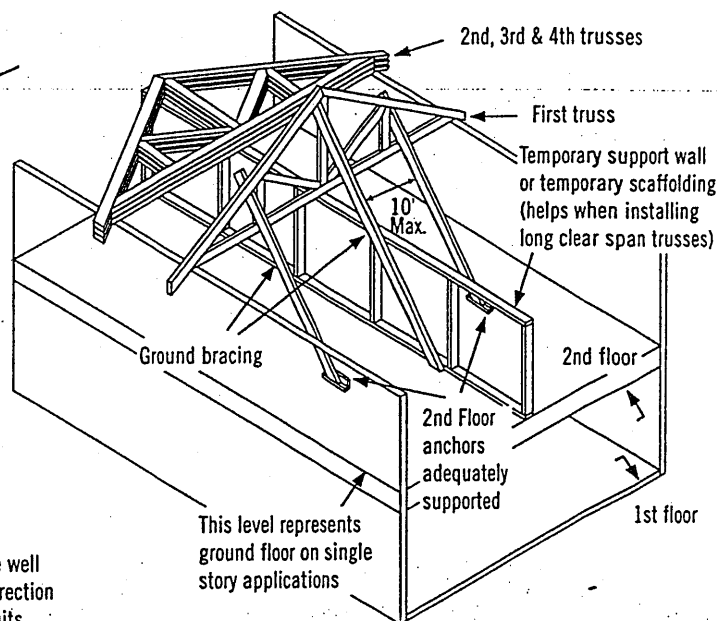
One satisfactory method ties the first unit of trusses off to a series of braces that are attached to a stake driven into the ground and securely anchored. The ground brace itself should be supported as shown below or it is apt to buckle. Additional ground braces in the opposite direction, inside the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

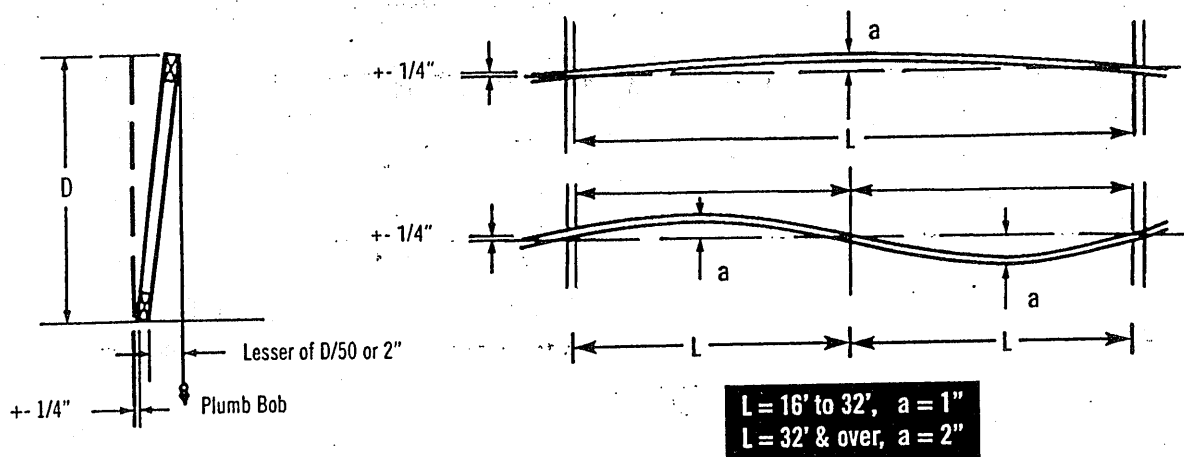


Inadequate size of bracing material or inadequate fastening is a major cause of erection dominoing.

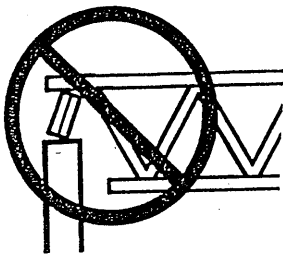
5 Erection Tolerance

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.

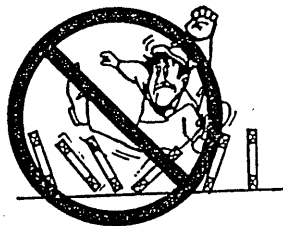
When sheathing, make sure nails are driven into the top chord of the trusses.



6 Bracing



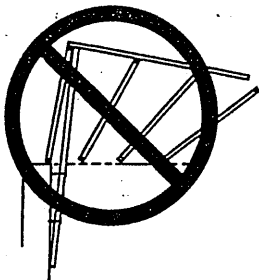
Do not install trusses on temporarily connected supports



Do not walk on unbraced trusses



Do not walk on trusses or gable ends lying flat

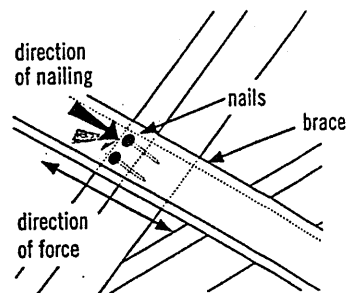


Nails in withdrawal (parallel to force)

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.



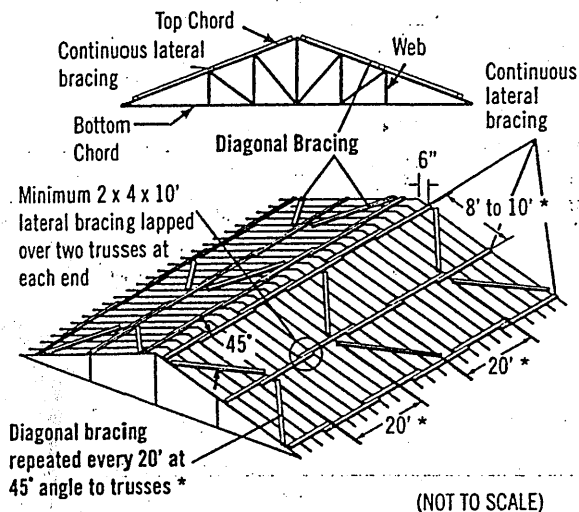
Well nailed (perpendicular to force)

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.

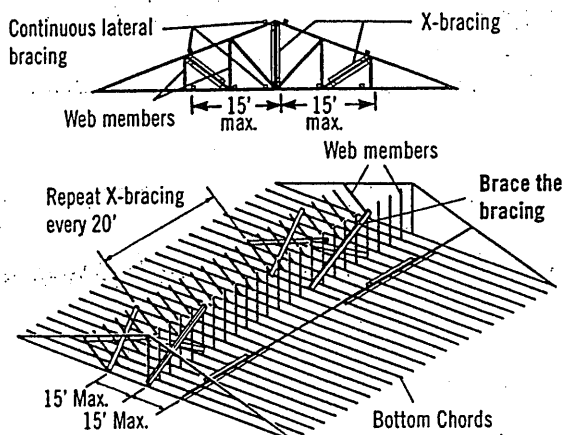


Exact spacing between trusses should be maintained as bracing is installed to avoid the hazardous practice of removing bracing to adjust spacing. This act of "adjusting spacing" can cause trusses to topple if connections are removed at the wrong time.

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.

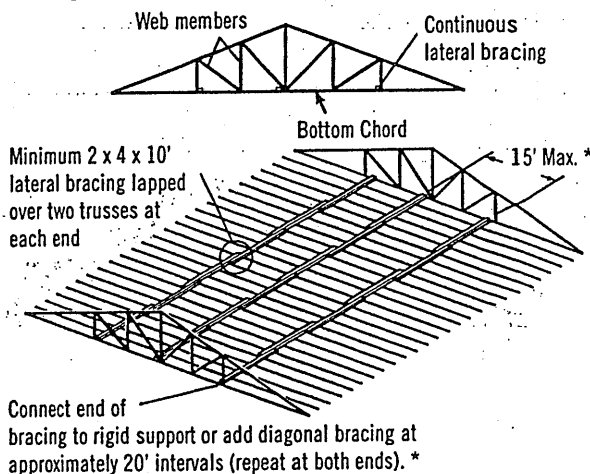
X-bracing should be installed on vertical web members wherever possible, at or near lateral bracing. Plywood or OSB may be substituted for X-bracing.



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

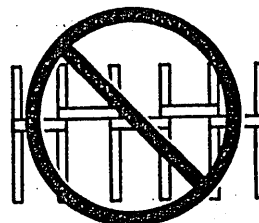
2) Bottom Chord Plane

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

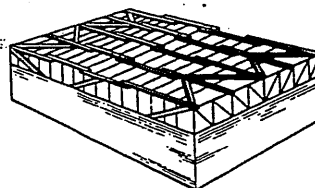


* Long spans, heavy loads or other spacing configurations may require closer spacing between lateral bracing and closer intervals between diagonals. Consult the building designer or HIB and DSB (Recommended Design Specification for Temporary Bracing of Metal-Plate Connected Wood Trusses) for details.

Diagonal or cross-bracing is very important!



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

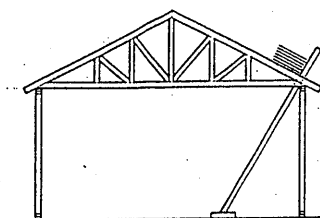
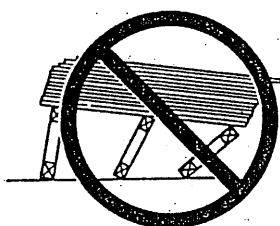


Bracing requirements using the same principles apply to parallel chord trusses

8 Stacking Materials

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

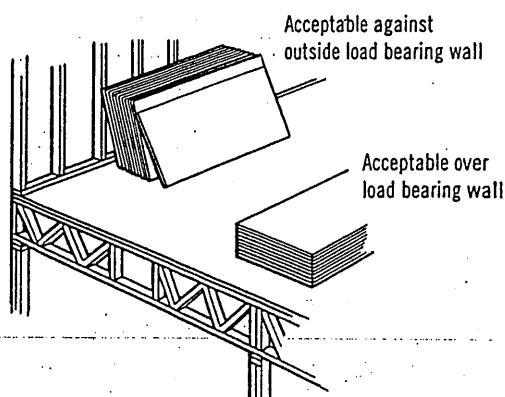
Never stack materials on unbraced or inadequately braced trusses



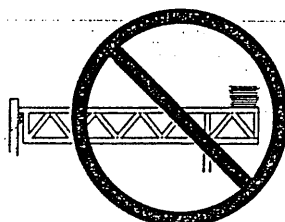
Platform must be rigidly braced

Proper distribution of construction materials is a must during construction.

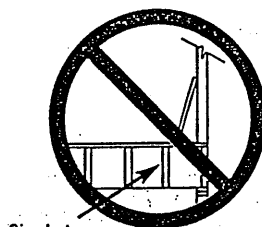
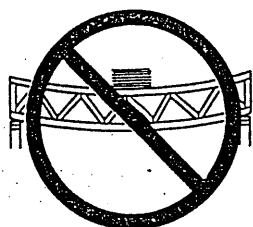
Never stack materials near a peak



Never stack materials on the cantilever of a truss

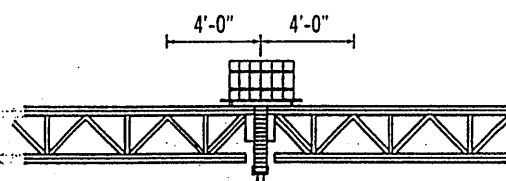


Always stack materials over two or more trusses.



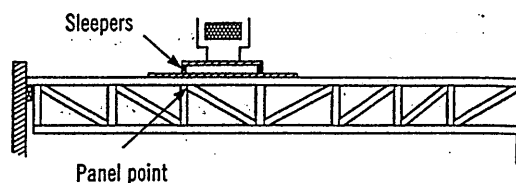
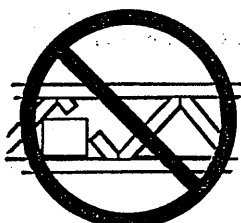
Single truss

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.



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.

[Selected text and figures referenced or reproduced from HIB and DSB by permission of the Truss Plate Institute, Madison, WI.]

THE CANADIAN WOOD TRUSS ASSOCIATION



L'ASSOCIATION CANADIENNE DES FABRICANTS DE FERMES DE BOIS

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