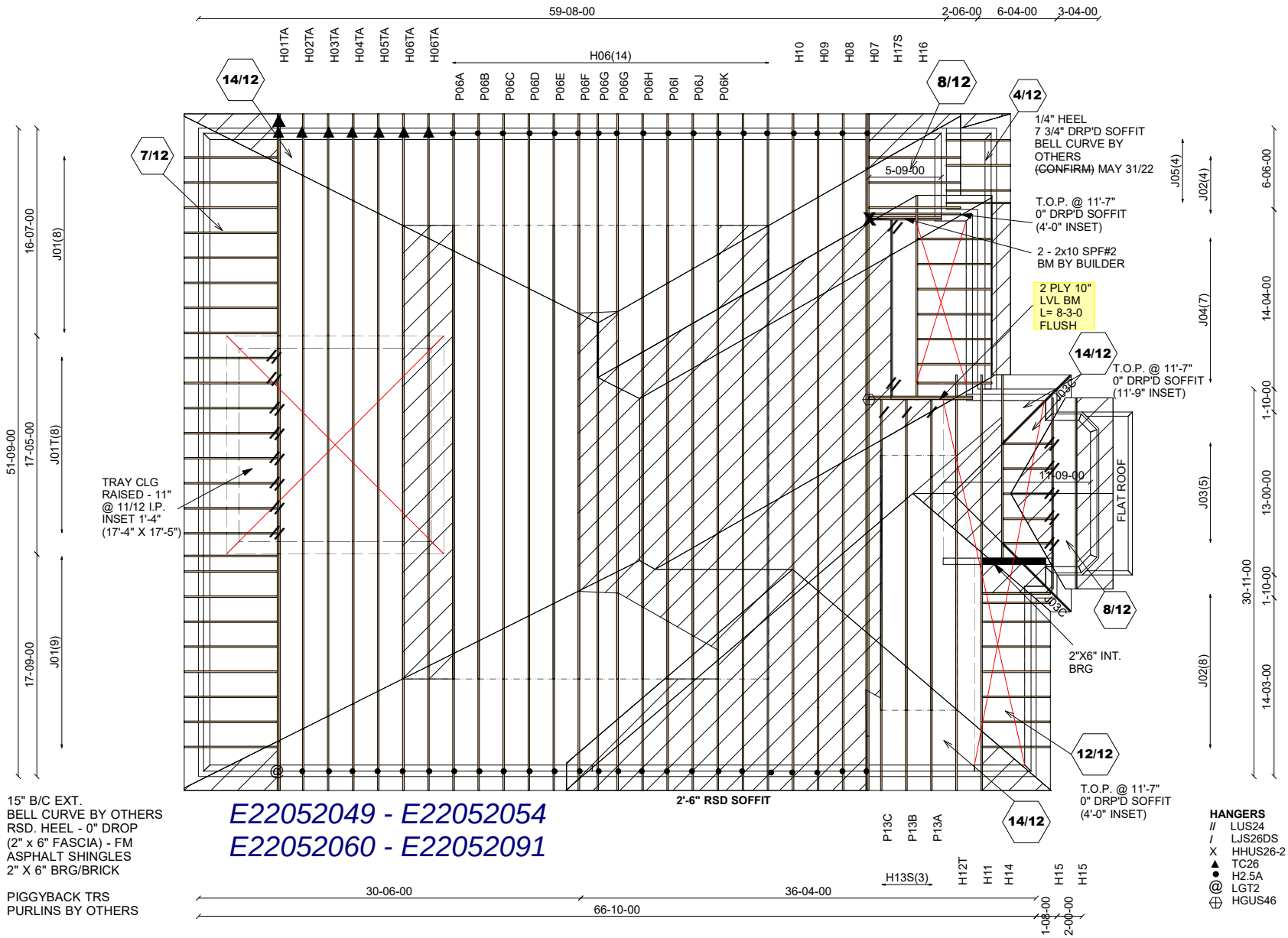
ALPA-BARRIE




15" B/C EXT.
BELL CURVE BY OTHERS
RSD. HEEL - 0" DROP
(2" x 6" FASCIA) - FM
ASPHALT SHINGLES
2" X 6" BRG/BRICK

PIGGYBACK TRS
PURLINS BY OTHERS

E22052049 - E22052054
E22052060 - E22052091

**HANGERS**

| | |
|---|---|
| // | LUS24 |
| / | LJS26DS |
| X | HHUS26-2 |
| ▲ | TC26 |
| ● | H2.5A |
| @ | LGT2 |
| ⊕ | HGUS46 |

Mitek V. 8.2.0

(ARCH. COM.)
PL# 117689

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'

CONVENTIONAL FRAMING BY OTHERS

| | | | |
|---|---|---|---|
| Job Track: 45147 | Builder / Location: GOLD PARK HOMES / VAUGHAN | Model / Elevation: " THE KINGSVIEW " | OPT 2ND FL OR OPT ELEVATOR OR LOGGIA (FLAT ROOF) |
| Layout ID: 343663 | | 6002 / B OPT 2ND FL | |
| Plan Log: 116408 | Project: PINE VALLEY PH 2 | 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 UTLILZED FOR ANY OTHER PURPOSE. | |
| | Date: 2022-05-31 | Designer: AMANDA | |

# EWP DESIGN INC.

(905) 832-2250 FAX (905) 832-0286

## RESPONSIBILITIES AND SPECIFICATIONS

**RESPONSIBILITIES**

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

**SPECIFICATIONS**

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

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

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343663 | H01TA | | 2 | TRUSS DESC. JT 45147 | E22052049 |

Alpha Roof Truss, Maple

Version 8.530 S Feb 23 2022 MiTek Industries, Inc. Tue Jun 14 10:22:29 2022 Page 1

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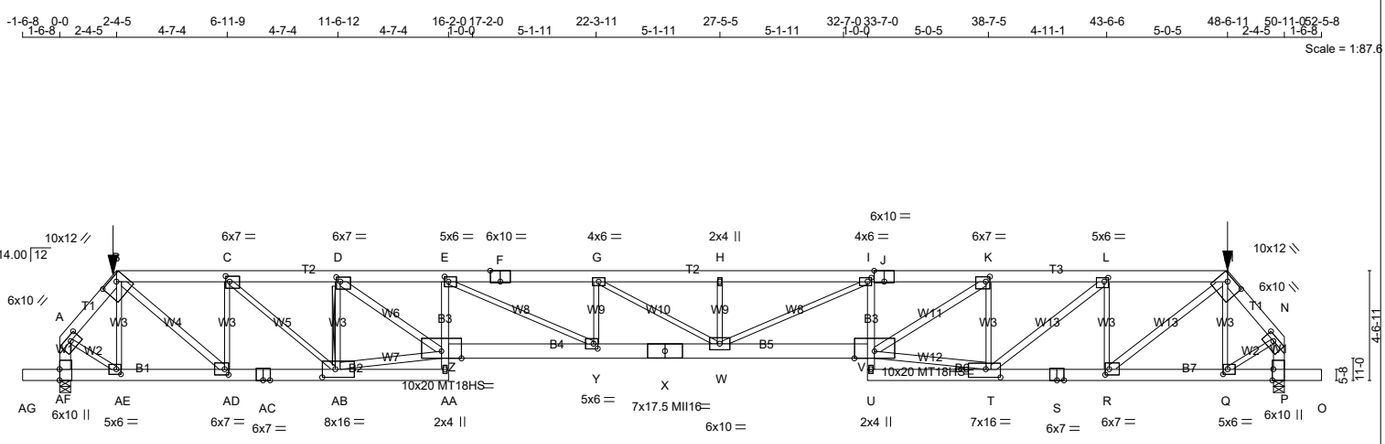


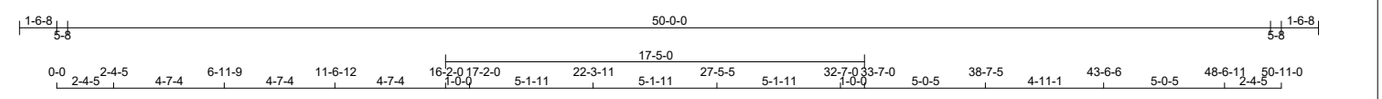


TOTAL WEIGHT = 2 X 305 = 609 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x6 | DRY | No.2 | SPF |
| B - F | 2x6 | DRY | 1650F 1.5E | SPF |
| F - J | 2x6 | DRY | 1650F 1.5E | SPF |
| J - M | 2x6 | DRY | 1650F 1.5E | SPF |
| M - N | 2x6 | DRY | No.2 | SPF |
| AF- A | 2x6 | DRY | No.2 | SPF |
| P - N | 2x6 | DRY | No.2 | SPF |
| AG- AC | 2x6 | DRY | No.2 | SPF |
| AC- AA | 2x6 | DRY | No.2 | SPF |
| Z - X | 2x8 | DRY | 1950F 1.7E | SPF |
| X - V | 2x8 | DRY | 1950F 1.7E | SPF |
| U - S | 2x6 | DRY | No.2 | SPF |
| S - O | 2x6 | DRY | No.2 | SPF |
| AA- E | 2x4 | DRY | No.2 | SPF |
| U - I | 2x4 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| B - AD | 2x4 | DRY | No.2 | SPF |
| T - L | 2x4 | DRY | No.2 | SPF |
| R - M | 2x4 | DRY | No.2 | SPF |
| AB- Z | 2x4 | DRY | 2100F 1.8E | SPF |
| D - Z | 2x4 | DRY | No.2 | SPF |
| V - T | 2x4 | DRY | 2100F 1.8E | SPF |
| V - K | 2x4 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

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

| CHORDS #ROWS | | SURFACE SPACING (IN) | LOAD(PLF) |
|---|---|---|---|
| TOP CHORDS : (0.122"X3") SPIRAL NAILS | | | |
| A- B | 2 | 12 | SIDE(140.3) |
| B- F | 2 | 12 | SIDE(64.4) |
| F- J | 2 | 12 | SIDE(64.4) |
| J- M | 2 | 12 | SIDE(64.4) |
| M- N | 2 | 12 | SIDE(140.3) |
| AF- A | 2 | 12 | TOP |
| P- N | 2 | 12 | TOP |
| BOTTOM CHORDS : (0.122"X3") SPIRAL NAILS | | | |
| AG- AC | 2 | 12 | SIDE(24.2) |
| AC- AA | 2 | 12 | SIDE(24.2) |
| U- S | 2 | 12 | SIDE(24.2) |
| S- O | 2 | 12 | SIDE(24.2) |
| Z- X | 2 | 12 | SIDE(71.6) |
| X- V | 2 | 12 | SIDE(71.6) |
| AA- E | 1 | 12 | TOP |
| U- I | 1 | 12 | TOP |
| WEBS : (0.122"X3") SPIRAL NAILS | | | |
| 2x3 | 1 | 6 | |
| 2x4 | 1 | 6 | |

NAILS TO BE DRIVEN FROM ONE SIDE ONLY.

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

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

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

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

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

END VERTICALS ARE NOT EXPOSED TO WIND.

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| AF | 7312 | 0 | 7616 | -80 | -1624 | 5-8 | 5-8 |
| P | 7315 | 0 | 7619 | 0 | -1643 | 5-8 | 5-8 |

PROVIDE ANCHORAGE AT BEARING JOINT AF FOR 1624 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT P FOR 1643 LBS FACTORED UPLIFT

PROVIDE FOR 80 LBS FACTORED HORIZONTAL REACTION AT JOINTAF

ALLOW FOR 0.3" OF HORIZONTAL MOVEMENT DUE TO TOTAL LOAD

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| AF | 5466 | 3206 / 0 | 1085 / 0 | 0 / 0 | 1272 / -2045 | 1378 / 0 | 0 / 0 |
| P | 5468 | 3208 / 0 | 1085 / 0 | 0 / 0 | 1262 / -2059 | 1378 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| AF | --- | 0 / 0 | 0 / 0 | 0 / 0 | 57 / -57 | 0 / 0 | 0 /0 |

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

BEARING SIZE FACTOR = 1.15 AT JNT(S) AF, P ( BASED ON SUPPORT DEPTH = 1-8 )

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 2.11 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 5.63 FT OR RIGID CEILING DIRECTLY APPLIED.

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

2x4 DRY SPF No.2 T-BRACE AT D-AB

FASTEN T AND I-BRACES TO NARROW EDGE OF WEB WITH ONE ROW PER PLY OF 3" COMMON WIRE NAILS @ 6" O.C. WITH 3" MINIMUM END DISTANCE. BRACE MUST COVER 90% OF WEB LENGTH.

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: (18)

C H O R D S

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -6720 / 1498 | -95.2 | -95.2 | 0.11 (13) | 4.57 |
| B- C | -11158 / 2467 | -206.7 | -206.7 | 0.22 (2) | 4.10 |
| C- D | -16287 / 3418 | -206.7 | -206.7 | 0.34 (2) | 3.40 |
| D- E | -25198 / 5012 | -206.7 | -206.7 | 0.63 (2) | 2.56 |
| E- F | -29960 / 5646 | -95.2 | -95.2 | 0.97 (2) | 2.14 |
| F- G | -29960 / 5646 | -95.2 | -95.2 | 0.97 (2) | 2.14 |
| G- H | -30134 / 5679 | -95.2 | -95.2 | 0.91 (3) | 2.13 |
| H- I | -30134 / 5679 | -95.2 | -95.2 | 1.00 (3) | 2.11 |
| I- J | -26107 / 5203 | -206.7 | -206.7 | 0.69 (3) | 2.48 |
| J- K | -26107 / 5203 | -206.7 | -206.7 | 0.69 (3) | 2.48 |
| K- L | -17034 / 3601 | -206.7 | -206.7 | 0.36 (3) | 3.32 |
| L- M | -11700 / 2611 | -206.7 | -206.7 | 0.25 (3) | 4.00 |
| M- N | -6741 / 1516 | -95.2 | -95.2 | 0.11 (14) | 4.57 |
| AF- A | -7400 / 1635 | 0.0 | 0.0 | 0.27 (2) | 5.51 |
| P- N | -7422 / 1654 | 0.0 | 0.0 | 0.27 (3) | 5.50 |
| AG-AF | 0 / 0 | -134.7 | -134.7 | 0.06 (1) | 10.00 |
| AF-AE | -80 / 80 | -77.8 | -77.8 | 0.08 (6) | 6.25 |
| AE-AD | -934 / 4273 | -77.8 | -77.8 | 0.36 (2) | 6.25 |
| AD-AC | -2382 / 11158 | -77.8 | -77.8 | 0.80 (2) | 6.25 |
| AC-AB | -2382 / 11158 | -77.8 | -77.8 | 0.80 (2) | 6.25 |
| AB-AA | -143 / 717 | -77.8 | -77.8 | 0.13 (2) | 6.25 |
| Z- Y | -4958 / 25390 | -182.7 | -182.7 | 0.73 (2) | 6.25 |
| Y- X | -5552 / 29960 | -182.7 | -182.7 | 0.84 (2) | 6.25 |
| X- W | -5552 / 29960 | -182.7 | -182.7 | 0.84 (2) | 6.25 |
| W- V | -5147 / 26316 | -182.7 | -182.7 | 0.77 (3) | 6.25 |
| U- T | -158 / 786 | -77.8 | -77.8 | 0.14 (6) | 6.25 |
| T- S | -2495 / 11701 | -77.8 | -77.8 | 0.84 (3) | 6.25 |
| S- R | -2495 / 11701 | -77.8 | -77.8 | 0.84 (3) | 6.25 |
| R- Q | -904 / 4287 | -77.8 | -77.8 | 0.38 (3) | 6.25 |
| Q- P | 0 / 0 | -77.8 | -77.8 | 0.10 (5) | 10.00 |
| P- O | 0 / 0 | -134.7 | -134.7 | 0.06 (1) | 10.00 |
| AA- Z | 0 / 219 | 0.0 | 0.0 | 0.47 (2) | 10.00 |
| Z- E | -3168 / 661 | 0.0 | 0.0 | 0.61 (3) | 5.63 |
| U- V | 0 / 225 | 0.0 | 0.0 | 0.52 (3) | 10.00 |
| V- I | -2826 / 600 | 0.0 | 0.0 | 0.62 (2) | 5.80 |

W E B S

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| AE- B | -1749 / 530 | 0.25 (2) |
| B-AD | -1938 / 9174 | 0.81 (3) |
| AD- C | -5702 / 1400 | 0.80 (3) |
| C-AB | -1288 / 6937 | 0.86 (3) |
| AB- D | -7290 / 1612 | 0.75 (3) |
| E- Y | -678 / 5122 | 0.63 (3) |
| Y- G | -736 / 226 | 0.07 (3) |
| G- W | -52 / 213 | 0.03 (3) |
| W- H | -584 / 184 | 0.05 (3) |
| W- I | -491 / 4282 | 0.53 (2) |
| T- K | -6961 / 1575 | 0.98 (2) |
| T- L | -1306 / 7026 | 0.62 (2) |
| R- M | -2041 / 9524 | 0.84 (2) |
| Q- M | -1729 / 538 | 0.24 (3) |
| A-AE | -1012 / 4818 | 0.60 (2) |
| Q- N | -1024 / 4833 | 0.60 (3) |
| AB- Z | -3273 / 15989 | 0.66 (2) |
| D- Z | -1933 / 10854 | 0.96 (3) |
| V- T | -3425 / 16686 | 0.69 (3) |
| V- K | -1891 / 10665 | 0.94 (2) |

FACTORED CONCENTRATED LOADS (LBS)

| JT | LOC. | LC1 | MAX- | MAX+ | FACE | DIR. | TYPE | HEEL | CONN. |
|---|---|---|---|---|---|---|---|---|---|
| B | 2-4-5 | -186 | -217 | 128 | FRONT | VERT | TOTAL | --- | C1 |
| M | 48-6-11 | -186 | -217 | 128 | FRONT | VERT | TOTAL | --- | C1 |

**CONNECTION REQUIREMENTS**

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

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | | |
|---|---|---|---|---|---|
| TOP | CH. | LL | = | 26.7 | PSF |
| | | DL | = | 6.0 | PSF |
| BOT | CH. | LL | = | 10.5 | PSF |
| | | DL | = | 7.4 | PSF |
| TOTAL | LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

GIRDER TYPE: CPrimeHip
SIDE SETBACK = 2-4-5
END SETBACK = 5-10-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDT'L LOADS BASED ON 99 % OF GSL.
LOADS APPLIED TO FIRST 16-2-0 OF SPAN MEASURED FROM THE LEFT.

GIRDER TYPE: CPrimeHip
SIDE SETBACK = 2-4-5
END SETBACK = 5-10-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDT'L LOADS BASED ON 99 % OF GSL.
LOADS APPLIED TO FIRST 17-4-0 OF SPAN MEASURED FROM THE RIGHT.

GIRDER TYPE: CStdGirder
START DISTANCE = 16-2-0
START SPAN CARRIED = 5-10-8
END DISTANCE = 33-7-0
END SPAN CARRIED = 5-10-8
END WALL WIDTH = 0-0
APPLIED TO FRONT SIDE OF BOTTOM CHORD.
- ADDT'L LOADS BASED ON 99 % OF GSL. (DEFINED BY USER)

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 520 (1.17")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 373 (1.64")

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=1.00/1.00 (H-I:3) , BC=0.84/1.00 (W-Y:2) , WB=0.98/1.00 (K-T:2) , SSI=0.34/1.00 (U-V:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

CONTINUED ON PAGE 2

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 6.0 | 10.0 | 2.25 | 4.50 |
| B | TTWW-h | MT20 | 10.0 | 12.0 | 2.75 | 7.25 |
| C | TMWW-t | MT20 | 6.0 | 7.0 | 2.75 | 2.00 |
| D | TMWW-t | MT20 | 6.0 | 7.0 | 2.25 | 2.00 |
| E | TMVW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.00 |
| F | TS-t | MT20 | 6.0 | 10.0 | Edge | 5.00 |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TMW+w | MT20 | 2.0 | 4.0 | | |
| I | TMVW-t | MT20 | 4.0 | 6.0 | 2.00 | 2.00 |
| J | TS-t | MT20 | 6.0 | 10.0 | Edge | 5.00 |
| K | TMWW-t | MT20 | 6.0 | 7.0 | 2.50 | 2.00 |
| L | TMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 2.00 |
| M | TTWW-h | MT20 | 10.0 | 12.0 | 2.75 | 7.25 |
| N | TMVW-t | MT20 | 6.0 | 10.0 | 2.25 | 4.50 |
| P | BMV1+t | MT20 | 6.0 | 10.0 | Edge | 0.50 |
| Q | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.25 |
| R | BMWW-t | MT20 | 6.0 | 7.0 | 2.75 | 2.00 |
| S | BS-t | MT20 | 6.0 | 7.0 | | |
| T | BMWWW-t | MT20 | 7.0 | 16.0 | 4.00 | 7.25 |
| U | BMV+p | MT20 | 2.0 | 4.0 | | |
| V | BVMWW-l | MT18HS | 10.0 | 20.0 | Edge | |
| W | BMWWW-t | MT20 | 6.0 | 10.0 | | |
| X | BS-t | MII16 | 7.0 | 17.5 | | |
| Y | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.00 |
| Z | BVMWW-l | MT18HS | 10.0 | 20.0 | Edge | |
| AA | BMV+p | MT20 | 2.0 | 4.0 | | |
| AB | BMWWW-t | MT20 | 8.0 | 16.0 | 4.00 | 6.50 |
| AC | BS-t | MT20 | 6.0 | 7.0 | | |
| AD | BMWW-t | MT20 | 6.0 | 7.0 | 2.75 | 2.00 |
| AE | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.25 |
| AF | BMV1+t | MT20 | 6.0 | 10.0 | Edge | |

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

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

**CONNECTION REQUIREMENTS**

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

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN) AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) | | SHEAR (PLI) | | SECTION (PLI) | |
|---|---|---|---|---|---|---|
| | MAX | MIN | MAX | MIN | MAX | MIN |
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |
| MII16 | 438 | 302 | 2547 | 1256 | 4283 | 1816 |
| MT18HS | 586 | 403 | 2455 | 1382 | 3163 | 3004 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.90 (K) (INPUT = 0.90 )
JSI METAL= 0.98 (X) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343663 | H02TA | | 1 | TRUSS DESC. JT 45147 | E22052050 |

Alpha Roof Truss, Maple

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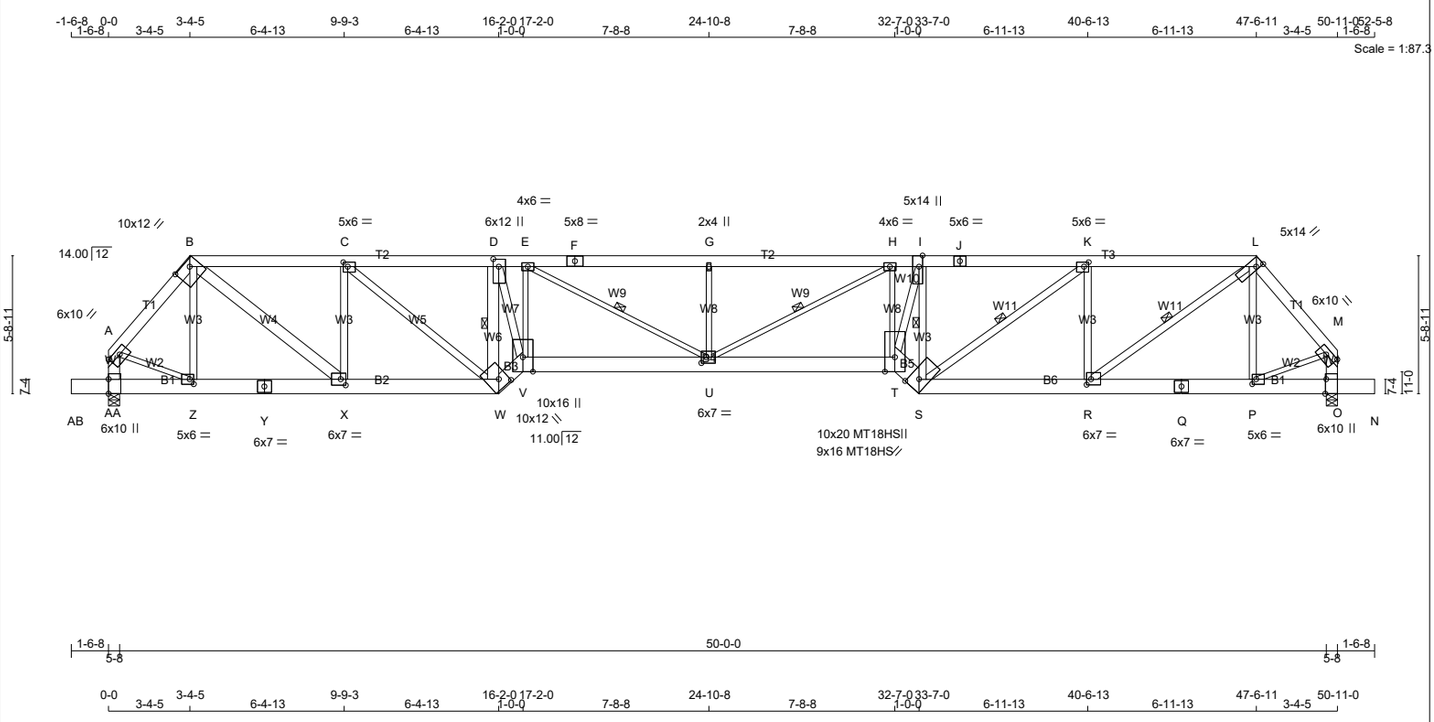




TOTAL WEIGHT = 348 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x6 | DRY | No.2 | SPF |
| B - F | 2x6 | DRY | 1650F 1.5E | SPF |
| F - J | 2x6 | DRY | 1650F 1.5E | SPF |
| J - L | 2x6 | DRY | 1650F 1.5E | SPF |
| L - M | 2x6 | DRY | No.2 | SPF |
| AA- A | 2x6 | DRY | No.2 | SPF |
| O - M | 2x6 | DRY | No.2 | SPF |
| AB- Y | 2x8 | DRY | No.2 | SPF |
| Y - W | 2x8 | DRY | No.2 | SPF |
| W - V | 2x8 | DRY | 1950F 1.7E | SPF |
| V - T | 2x8 | DRY | 1950F 1.7E | SPF |
| T - S | 2x10 | DRY | No.2 | SPF |
| S - Q | 2x8 | DRY | No.2 | SPF |
| Q - N | 2x8 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| Z - B | 2x4 | DRY | 1650F 1.5E | SPF |
| B - X | 2x6 | DRY | No.2 | SPF |
| X - C | 2x4 | DRY | 1650F 1.5E | SPF |
| C - W | 2x4 | DRY | No.2 | SPF |
| W - D | 2x6 | DRY | No.2 | SPF |
| D - V | 2x4 | DRY | 1650F 1.5E | SPF |
| T - I | 2x4 | DRY | 2100F 1.8E | SPF |
| S - I | 2x4 | DRY | 1650F 1.5E | SPF |
| S - K | 2x4 | DRY | No.2 | SPF |
| R - K | 2x4 | DRY | 1650F 1.5E | SPF |
| R - L | 2x4 | DRY | No.2 | SPF |
| P - L | 2x4 | DRY | 1650F 1.5E | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| B | TTWW-h | MT20 | 10.0 | 12.0 | 3.00 | 7.50 |
| C | TMWW-t | MT20 | 5.0 | 6.0 | 2.25 | 2.25 |
| D | TMWW+t | MT20 | 6.0 | 12.0 | 3.75 | 2.75 |
| E | TMWW-t | MT20 | 4.0 | 6.0 | | |
| F | TS-t | MT20 | 5.0 | 8.0 | | |
| G | TMW+w | MT20 | 2.0 | 4.0 | | |
| H | TMWW-t | MT20 | 4.0 | 6.0 | | |
| I | TMWW+t | MT20 | 5.0 | 14.0 | Edge | 1.75 |
| J | TS-t | MT20 | 5.0 | 6.0 | | |
| K | TMWW-t | MT20 | 5.0 | 6.0 | 2.25 | 2.25 |
| L | TTWW+h | MT20 | 5.0 | 14.0 | 3.50 | 1.25 |
| M | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| O | BMV1+t | MT20 | 6.0 | 10.0 | Edge | 0.50 |
| P | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.00 |
| Q | BS-t | MT20 | 6.0 | 7.0 | | |
| R | BMWW-t | MT20 | 6.0 | 7.0 | 2.75 | 2.25 |
| S | BBWW+h | MT18HS | 9.0 | 16.0 | Edge | |
| T | BBWW+p | MT18HS | 10.0 | 20.0 | Edge | |
| U | BMWWW-t | MT20 | 6.0 | 7.0 | 3.00 | 2.50 |
| V | BBWW+p | MT20 | 10.0 | 16.0 | Edge | |
| W | BBWW+h | MT20 | 10.0 | 12.0 | 4.50 | 4.25 |
| X | BMWW-t | MT20 | 6.0 | 7.0 | 3.00 | 2.50 |
| Y | BS-t | MT20 | 6.0 | 7.0 | | |
| Z | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.00 |
| AA | BMV1+t | MT20 | 6.0 | 10.0 | Edge | |

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

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

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

END VERTICALS ARE NOT EXPOSED TO WIND.

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| AA | 3637 | 0 | 3923 | -113 | -590 | 5-8 | 5-8 |
| O | 3637 | 0 | 3923 | 0 | -590 | 5-8 | 5-8 |

PROVIDE ANCHORAGE AT BEARING JOINT AA FOR 590 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT O FOR 590 LBS FACTORED UPLIFT

PROVIDE FOR 113 LBS FACTORED HORIZONTAL REACTION AT JOINTAA

ALLOW FOR 0.3" OF HORIZONTAL MOVEMENT DUE TO TOTAL LOAD

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| AA | 2734 | 1634 / 0 | 567 / 0 | 0 / 0 | 415 / -887 | 724 / 0 | 0 / 0 |
| O | 2734 | 1634 / 0 | 567 / 0 | 0 / 0 | 381 / -887 | 724 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| AA | --- | 0 / 0 | 0 / 0 | 0 / 0 | 80 / -80 | 0 / 0 | 0 /0 |

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

BEARING SIZE FACTOR = 1.15 AT JNT(S) AA, O ( BASED ON SUPPORT DEPTH = 1-8 )

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 2.70 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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-W, E-U, H-U, I-S, K-S, L-R.

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: (18)

CHORDS

| MEMB. FR-TO | FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | -3602 / 572 | -95.2 | -95.2 | 0.16 (2) | 4.41 | 10.00 |
| B- C | -5799 / 996 | -95.2 | -95.2 | 0.33 (2) | 3.97 | 3.37 |
| C- D | -8115 / 1357 | -95.2 | -95.2 | 0.42 (2) | 3.37 | 3.07 |
| D- E | -10120 / 1665 | -95.2 | -95.2 | 0.38 (2) | 3.07 | 2.70 |
| E- F | -11235 / 1802 | -95.2 | -95.2 | 0.77 (2) | 2.70 | 2.70 |
| F- G | -11235 / 1802 | -95.2 | -95.2 | 0.77 (2) | 2.70 | 2.70 |
| G- H | -11235 / 1802 | -95.2 | -95.2 | 0.77 (2) | 2.70 | 2.70 |
| H- I | -10579 / 1717 | -95.2 | -95.2 | 0.39 (3) | 3.00 | 3.23 |
| I- J | -8489 / 1413 | -95.2 | -95.2 | 0.52 (3) | 3.23 | 3.23 |
| J- K | -8489 / 1413 | -95.2 | -95.2 | 0.52 (3) | 3.23 | 3.83 |
| K- L | -6063 / 1036 | -95.2 | -95.2 | 0.40 (3) | 3.83 | 4.39 |
| L- M | -3634 / 575 | -95.2 | -95.2 | 0.16 (3) | 4.39 | 5.58 |
| AA- A | -3673 / 588 | 0.0 | 0.0 | 0.24 (2) | 5.58 | 5.56 |
| O- M | -3705 / 591 | 0.0 | 0.0 | 0.24 (3) | 5.56 | |
| AB-AA | 0 / 0 | -134.7 | -134.7 | 0.07 (1) | 10.00 | |
| AA- Z | -113 / 113 | -39.5 | -39.5 | 0.05 (6) | 6.25 | |
| Z- Y | -343 / 2308 | -39.5 | -39.5 | 0.27 (2) | 6.25 | |
| Y- X | -343 / 2308 | -39.5 | -39.5 | 0.27 (2) | 6.25 | |
| X- W | -880 / 5799 | -39.5 | -39.5 | 0.64 (2) | 6.25 | |
| W- V | -1596 / 10478 | -39.5 | -39.5 | 0.44 (2) | 6.25 | |
| V- U | -1553 / 10143 | -39.5 | -39.5 | 0.51 (2) | 6.25 | |
| U- T | -1600 / 10597 | -39.5 | -39.5 | 0.53 (3) | 6.25 | |
| T- S | -1675 / 11163 | -39.5 | -39.5 | 0.93 (3) | 6.25 | |
| S- R | -883 / 6065 | -39.5 | -39.5 | 0.69 (3) | 6.25 | |
| R- Q | -290 / 2330 | -39.5 | -39.5 | 0.32 (3) | 6.25 | |
| Q- P | -290 / 2330 | -39.5 | -39.5 | 0.32 (3) | 6.25 | |
| P- O | 0 / 0 | -39.5 | -39.5 | 0.10 (5) | 10.00 | |
| O- N | 0 / 0 | -134.7 | -134.7 | 0.07 (1) | 10.00 | |

WEBS

| MEMB. FR-TO | FORCE (LBS) | MAX. FACTORED | MAX CSI (LC) |
|---|---|---|---|
| Z- B | -543 / 159 | | 0.11 (2) |
| B- X | -709 / 4502 | | 0.53 (3) |
| X- C | -2603 / 554 | | 0.55 (3) |
| C- W | -479 / 2997 | | 0.48 (3) |
| W- D | -8766 / 1399 | | 0.82 (2) |
| D- V | -1326 / 8572 | | 1.00 (2) |
| V- E | -903 / 237 | | 0.25 (3) |
| E- U | -178 / 1290 | | 0.29 (3) |
| U- G | -1007 / 303 | | 0.27 (2) |
| U- H | -98 / 768 | | 0.17 (2) |
| T- H | -672 / 190 | | 0.19 (2) |
| T- I | -1358 / 8861 | | 0.66 (3) |
| S- I | -9062 / 1444 | | 0.90 (3) |
| S- K | -487 / 3027 | | 0.49 (2) |
| R- K | -2602 / 568 | | 0.55 (2) |
| R- L | -735 / 4662 | | 0.75 (2) |
| P- L | -524 / 157 | | 0.11 (10) |
| A- Z | -308 / 2444 | | 0.55 (2) |
| P- M | -310 / 2466 | | 0.55 (3) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN) AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 739 (0.83")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 527 (1.16")

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=0.77/1.00 (E-G:2) , BC=0.93/1.00 (S-T:3) , WB=1.00/1.00 (D-V:2) , SSI=0.29/1.00 (E-G:2)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.89 (D) (INPUT = 0.90 )
JSI METAL= 0.93 (V) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343663 | H03TA | | 1 | TRUSS DESC. JT 45147 | E22052051 |

Alpha Roof Truss, Maple

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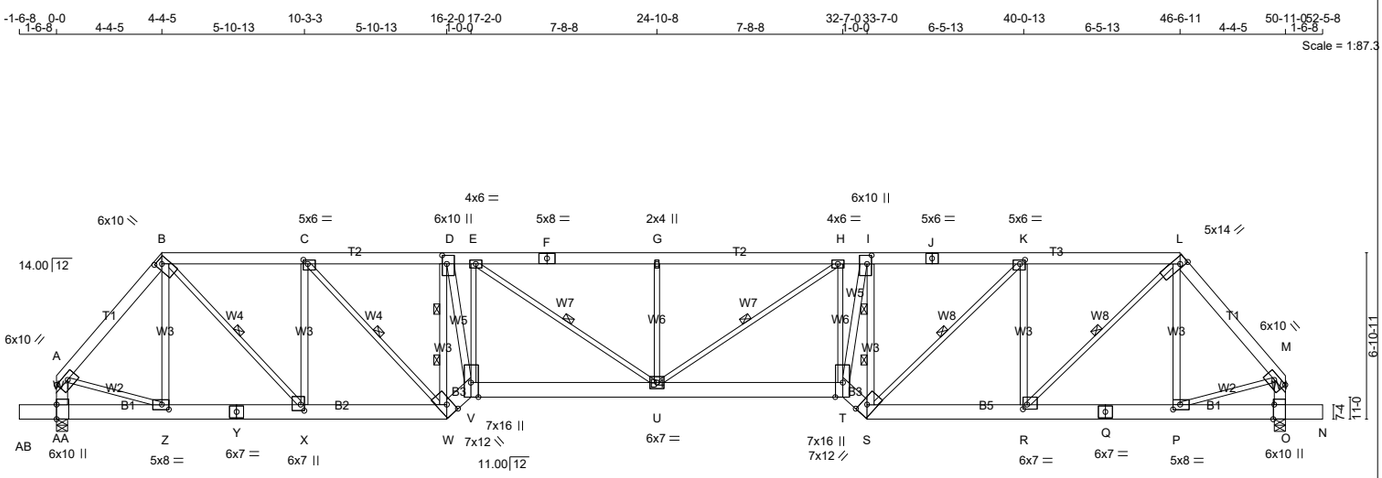


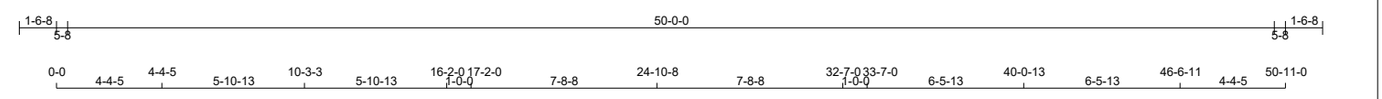


TOTAL WEIGHT = 348 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x6 | DRY | No.2 | SPF |
| B - F | 2x6 | DRY | 1650F 1.5E | SPF |
| F - J | 2x6 | DRY | 1650F 1.5E | SPF |
| J - L | 2x6 | DRY | 1650F 1.5E | SPF |
| L - M | 2x6 | DRY | No.2 | SPF |
| AA- A | 2x6 | DRY | No.2 | SPF |
| O - M | 2x6 | DRY | No.2 | SPF |
| AB- Y | 2x8 | DRY | No.2 | SPF |
| Y - W | 2x8 | DRY | No.2 | SPF |
| W - V | 2x8 | DRY | No.2 | SPF |
| V - T | 2x8 | DRY | No.2 | SPF |
| T - S | 2x8 | DRY | No.2 | SPF |
| S - Q | 2x8 | DRY | No.2 | SPF |
| Q - N | 2x8 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| Z - B | 2x4 | DRY | 1650F 1.5E | SPF |
| X - C | 2x4 | DRY | 1650F 1.5E | SPF |
| W - D | 2x4 | DRY | 1650F 1.5E | SPF |
| D - V | 2x4 | DRY | 1650F 1.5E | SPF |
| T - I | 2x4 | DRY | 1650F 1.5E | SPF |
| S - I | 2x4 | DRY | 1650F 1.5E | SPF |
| R - K | 2x4 | DRY | 1650F 1.5E | SPF |
| P - L | 2x4 | DRY | 1650F 1.5E | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| B | TTWW+h | MT20 | 6.0 | 10.0 | 2.50 | 2.75 |
| C | TMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 2.25 |
| D | TMWW+t | MT20 | 6.0 | 10.0 | 4.25 | 2.25 |
| E | TMWW-t | MT20 | 4.0 | 6.0 | | |
| F | TS-t | MT20 | 5.0 | 8.0 | | |
| G | TMW+w | MT20 | 2.0 | 4.0 | | |
| H | TMWW-t | MT20 | 4.0 | 6.0 | | |
| I | TMWW+t | MT20 | 6.0 | 10.0 | 4.25 | 2.25 |
| J | TS-t | MT20 | 5.0 | 6.0 | | |
| K | TMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 2.50 |
| L | TTWW+h | MT20 | 5.0 | 14.0 | 3.50 | 1.75 |
| M | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| O | BMV1+t | MT20 | 6.0 | 10.0 | Edge | 0.50 |
| P | BMWW-t | MT20 | 5.0 | 8.0 | 2.50 | 3.50 |
| Q | BS-t | MT20 | 6.0 | 7.0 | | |
| R | BMWW-t | MT20 | 6.0 | 7.0 | 2.25 | 2.00 |
| S | BBWW+h | MT20 | 7.0 | 12.0 | 5.25 | 2.75 |
| T | BBWW+p | MT20 | 7.0 | 16.0 | Edge | 3.75 |
| U | BMWWW-t | MT20 | 6.0 | 7.0 | | |
| V | BBWW+p | MT20 | 7.0 | 16.0 | Edge | 3.75 |
| W | BBWW+h | MT20 | 7.0 | 12.0 | 5.25 | 2.75 |
| X | BMWW+t | MT20 | 6.0 | 7.0 | 3.00 | 1.75 |
| Y | BS-t | MT20 | 6.0 | 7.0 | | |
| Z | BMWW-t | MT20 | 5.0 | 8.0 | 2.50 | 3.50 |
| AA | BMV1+t | MT20 | 6.0 | 10.0 | Edge | |

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

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

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

END VERTICALS ARE NOT EXPOSED TO WIND.

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| AA | 3637 | 0 | 3904 | -145 | -586 | 5-8 | 5-8 |
| O | 3637 | 0 | 3904 | 0 | -586 | 5-8 | 5-8 |

PROVIDE ANCHORAGE AT BEARING JOINT AA FOR 586 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT O FOR 586 LBS FACTORED UPLIFT

PROVIDE FOR 145 LBS FACTORED HORIZONTAL REACTION AT JOINTAA

ALLOW FOR 0.3" OF HORIZONTAL MOVEMENT DUE TO TOTAL LOAD

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| AA | 2734 | 1621 / 0 | 567 / 0 | 0 / 0 | 412 / -884 | 724 / 0 | 0 / 0 |
| O | 2734 | 1621 / 0 | 567 / 0 | 0 / 0 | 366 / -884 | 724 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| AA | --- | 0 / 0 | 0 / 0 | 0 / 0 | 104 / -104 | 0 / 0 | 0 /0 |

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

BEARING SIZE FACTOR = 1.15 AT JNT(S) AA, O ( BASED ON SUPPORT DEPTH = 1-8 )

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 3.08 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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-X, C-W, E-U, H-U, K-S, L-R.

2 LATERAL BRACE(S) AT 1/ 3 LENGTH OF D-W, I-S.

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: (18)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -3709 / 590 | -95.2 | -95.2 | 0.24 (2) | 4.28 |
| B- C | -4873 / 881 | -95.2 | -95.2 | 0.25 (2) | 4.33 |
| C- D | -6593 / 1145 | -95.2 | -95.2 | 0.32 (2) | 3.77 |
| D- E | -7883 / 1343 | -95.2 | -95.2 | 0.33 (2) | 3.45 |
| E- F | -8846 / 1460 | -95.2 | -95.2 | 0.64 (2) | 3.08 |
| F- G | -8846 / 1460 | -95.2 | -95.2 | 0.64 (2) | 3.08 |
| G- H | -8846 / 1460 | -95.2 | -95.2 | 0.64 (2) | 3.08 |
| H- I | -8135 / 1364 | -95.2 | -95.2 | 0.30 (3) | 3.44 |
| I- J | -6828 / 1180 | -95.2 | -95.2 | 0.37 (3) | 3.67 |
| J- K | -6828 / 1180 | -95.2 | -95.2 | 0.37 (3) | 3.67 |
| K- L | -5092 / 913 | -95.2 | -95.2 | 0.31 (3) | 4.19 |
| L- M | -3713 / 589 | -95.2 | -95.2 | 0.24 (3) | 4.28 |
| AA- A | -3648 / 595 | 0.0 | 0.0 | 0.24 (2) | 5.60 |
| O- M | -3652 / 595 | 0.0 | 0.0 | 0.24 (3) | 5.60 |
| AB-AA | 0 / 0 | -134.7 | -134.7 | 0.07 (1) | 10.00 |
| AA- Z | -145 / 145 | -39.5 | -39.5 | 0.09 (6) | 6.25 |
| Z- Y | -350 / 2389 | -39.5 | -39.5 | 0.32 (2) | 6.25 |
| Y- X | -350 / 2389 | -39.5 | -39.5 | 0.32 (2) | 6.25 |
| X- W | -731 / 4874 | -39.5 | -39.5 | 0.54 (2) | 6.25 |
| W- V | -1378 / 9135 | -39.5 | -39.5 | 0.89 (2) | 6.25 |
| V- U | -1195 / 7895 | -39.5 | -39.5 | 0.89 (2) | 6.25 |
| U- T | -1206 / 8147 | -39.5 | -39.5 | 0.92 (3) | 6.25 |
| T- S | -1324 / 9024 | -39.5 | -39.5 | 0.88 (3) | 6.25 |
| S- R | -717 / 5092 | -39.5 | -39.5 | 0.58 (3) | 6.25 |
| R- Q | -282 / 2392 | -39.5 | -39.5 | 0.32 (3) | 6.25 |
| Q- P | -282 / 2392 | -39.5 | -39.5 | 0.32 (3) | 6.25 |
| P- O | 0 / 0 | -39.5 | -39.5 | 0.10 (5) | 10.00 |
| O- N | 0 / 0 | -134.7 | -134.7 | 0.07 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| Z- B | -369 / 133 | 0.13 (9) |
| B- X | -584 / 3673 | 0.83 (3) |
| X- C | -2519 / 531 | 0.89 (3) |
| C- W | -410 / 2557 | 0.58 (3) |
| W- D | -7834 / 1239 | 0.67 (2) |
| D- V | -1085 / 7078 | 0.82 (2) |
| V- E | -632 / 199 | 0.28 (3) |
| E- U | -174 / 1222 | 0.27 (3) |
| U- G | -1057 / 311 | 0.46 (10) |
| U- H | -127 / 907 | 0.20 (2) |
| T- H | -679 / 199 | 0.31 (2) |
| T- I | -1086 / 7129 | 0.83 (3) |
| S- I | -7603 / 1205 | 0.65 (3) |
| S- K | -400 / 2463 | 0.55 (2) |
| R- K | -2460 / 537 | 0.86 (2) |
| R- L | -606 / 3806 | 0.86 (2) |
| P- L | -389 / 137 | 0.13 (10) |
| A- Z | -295 / 2473 | 0.56 (2) |
| P- M | -295 / 2476 | 0.56 (3) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN} AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 904 (0.68")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 644 (0.95")

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=0.64/1.00 (E-G:2) , BC=0.92/1.00 (T-U:3) , WB=0.89/1.00 (C-X:3) , SSI=0.31/1.00 (D-E:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (C) (INPUT = 0.90 )
JSI METAL= 0.82 (I) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343663 | H04TA | | 1 | TRUSS DESC. JT 45147 | E22052052 |

Alpha Roof Truss, Maple

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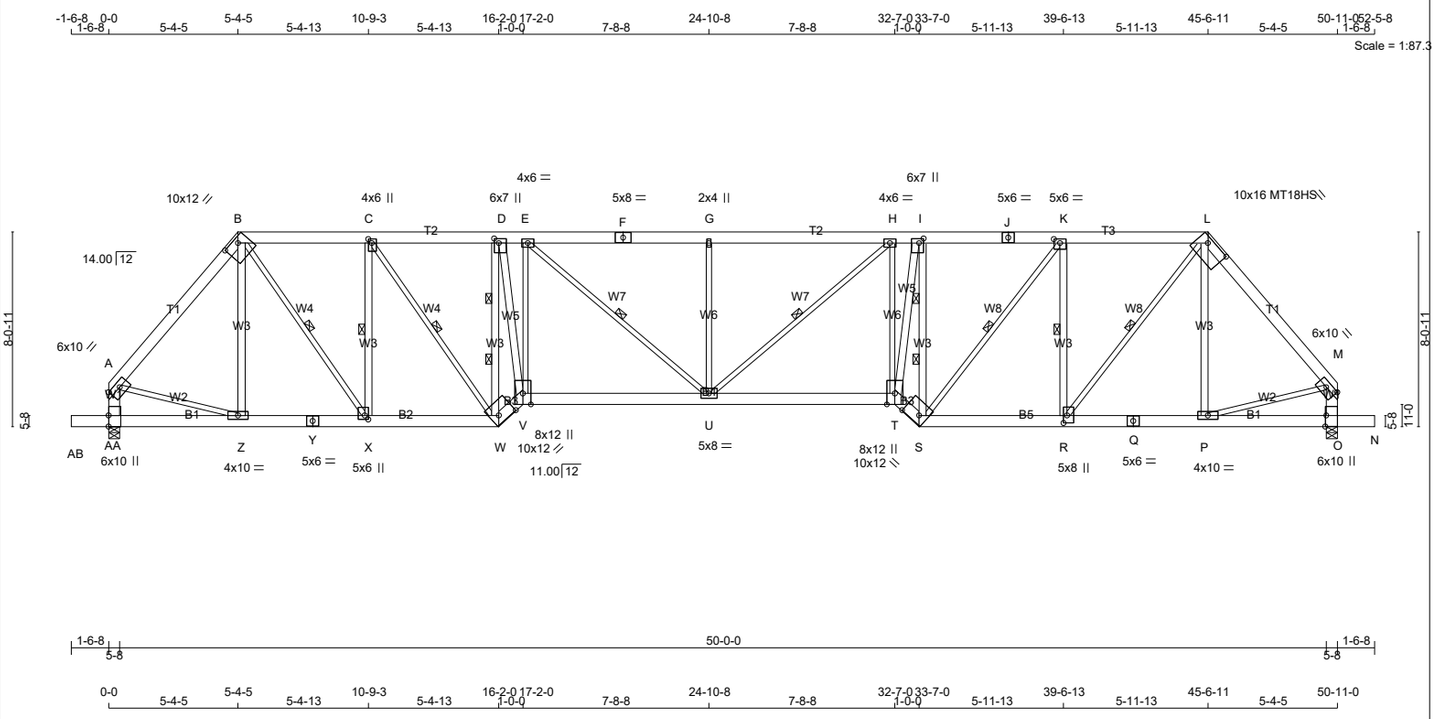


TOTAL WEIGHT = 339 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x6 | DRY | No.2 | SPF |
| B - F | 2x6 | DRY | No.2 | SPF |
| F - J | 2x6 | DRY | No.2 | SPF |
| J - L | 2x6 | DRY | No.2 | SPF |
| L - M | 2x6 | DRY | No.2 | SPF |
| AA- A | 2x6 | DRY | No.2 | SPF |
| O - M | 2x6 | DRY | No.2 | SPF |
| AB- Y | 2x6 | DRY | No.2 | SPF |
| Y - W | 2x6 | DRY | No.2 | SPF |
| W - V | 2x6 | DRY | No.2 | SPF |
| V - T | 2x6 | DRY | No.2 | SPF |
| T - S | 2x6 | DRY | No.2 | SPF |
| S - Q | 2x6 | DRY | No.2 | SPF |
| Q - N | 2x6 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| Z - B | 2x4 | DRY | 1650F 1.5E | SPF |
| X - C | 2x4 | DRY | 1650F 1.5E | SPF |
| W - D | 2x4 | DRY | 1650F 1.5E | SPF |
| D - V | 2x4 | DRY | No.2 | SPF |
| T - I | 2x4 | DRY | No.2 | SPF |
| S - I | 2x4 | DRY | 1650F 1.5E | SPF |
| R - K | 2x4 | DRY | 1650F 1.5E | SPF |
| P - L | 2x4 | DRY | 1650F 1.5E | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| B | TTWW-h | MT20 | 10.0 | 12.0 | 2.50 | 7.00 |
| C | TMWW+t | MT20 | 4.0 | 6.0 | 2.00 | 1.75 |
| D | TMWW+t | MT20 | 6.0 | 7.0 | 2.25 | 2.25 |
| E | TMWW-t | MT20 | 4.0 | 6.0 | | |
| F | TS-t | MT20 | 5.0 | 8.0 | | |
| G | TMW+w | MT20 | 2.0 | 4.0 | | |
| H | TMWW-t | MT20 | 4.0 | 6.0 | | |
| I | TMWW+t | MT20 | 6.0 | 7.0 | 2.25 | 2.25 |
| J | TS-t | MT20 | 5.0 | 6.0 | | |
| K | TMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 3.00 |
| L | TTWW-h | MT18HS | 10.0 | 16.0 | 2.50 | 11.00 |
| M | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| O | BMV1+t | MT20 | 6.0 | 10.0 | Edge | 0.50 |
| P | BMWW-t | MT20 | 4.0 | 10.0 | | |
| Q | BS-t | MT20 | 5.0 | 6.0 | | |
| R | BMWW+t | MT20 | 5.0 | 8.0 | 3.75 | 1.75 |
| S | BBWW-h | MT20 | 10.0 | 12.0 | 3.75 | 8.00 |
| T | BBWW+p | MT20 | 8.0 | 12.0 | Edge | |
| U | BMWWW-t | MT20 | 5.0 | 8.0 | | |
| V | BBWW+p | MT20 | 8.0 | 12.0 | Edge | |
| W | BBWW-h | MT20 | 10.0 | 12.0 | 3.75 | 8.00 |
| X | BMWW+t | MT20 | 5.0 | 6.0 | 2.00 | 1.75 |
| Y | BS-t | MT20 | 5.0 | 6.0 | | |
| Z | BMWW-t | MT20 | 4.0 | 10.0 | | |
| AA | BMV1+t | MT20 | 6.0 | 10.0 | Edge | |

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

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

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

END VERTICALS ARE NOT EXPOSED TO WIND.

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| AA | 3637 | 0 | 3883 | -178 | -582 | 5-8 | 5-8 |
| O | 3637 | 0 | 3883 | 0 | -582 | 5-8 | 5-8 |

PROVIDE ANCHORAGE AT BEARING JOINT AA FOR 582 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT O FOR 582 LBS FACTORED UPLIFT

PROVIDE FOR 178 LBS FACTORED HORIZONTAL REACTION AT JOINTAA

ALLOW FOR 0.3" OF HORIZONTAL MOVEMENT DUE TO TOTAL LOAD

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| AA | 2734 | 1607 / 0 | 567 / 0 | 0 / 0 | 408 / -881 | 724 / 0 | 0 / 0 |
| O | 2734 | 1607 / 0 | 567 / 0 | 0 / 0 | 353 / -881 | 724 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| AA | --- | 0 / 0 | 0 / 0 | 0 / 0 | 127 / -127 | 0 / 0 | 0 /0 |

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

BEARING SIZE FACTOR = 1.15 AT JNT(S) AA, O ( BASED ON SUPPORT DEPTH = 1-8 )

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 2.48 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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-X, C-X, C-W, E-U, H-U, K-S, K-R, L-R.

2 LATERAL BRACE(S) AT 1/ 3 LENGTH OF D-W, I-S.

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: (18)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -3683 / 585 | -95.2 | -95.2 | 0.35 (2) | 4.20 |
| B- C | -4200 / 804 | -95.2 | -95.2 | 0.32 (2) | 4.00 |
| C- D | -5482 / 998 | -95.2 | -95.2 | 0.52 (2) | 3.35 |
| D- E | -6364 / 1133 | -95.2 | -95.2 | 0.54 (2) | 3.06 |
| E- F | -7200 / 1232 | -95.2 | -95.2 | 1.00 (2) | 2.48 |
| F- G | -7200 / 1232 | -95.2 | -95.2 | 1.00 (2) | 2.48 |
| G- H | -7200 / 1232 | -95.2 | -95.2 | 1.00 (2) | 2.48 |
| H- I | -6567 / 1147 | -95.2 | -95.2 | 0.49 (3) | 3.10 |
| I- J | -5675 / 1027 | -95.2 | -95.2 | 0.50 (3) | 3.35 |
| J- K | -5675 / 1027 | -95.2 | -95.2 | 0.50 (3) | 3.35 |
| K- L | -4377 / 831 | -95.2 | -95.2 | 0.40 (3) | 3.84 |
| L- M | -3685 / 585 | -95.2 | -95.2 | 0.35 (3) | 4.20 |
| AA- A | -3592 / 594 | 0.0 | 0.0 | 0.24 (2) | 5.64 |
| O- M | -3593 / 594 | 0.0 | 0.0 | 0.24 (3) | 5.64 |
| AB-AA | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |
| AA- Z | -178 / 178 | -39.5 | -39.5 | 0.11 (6) | 6.25 |
| Z- Y | -342 / 2378 | -39.5 | -39.5 | 0.38 (2) | 6.25 |
| Y- X | -342 / 2378 | -39.5 | -39.5 | 0.38 (2) | 6.25 |
| X- W | -621 / 4200 | -39.5 | -39.5 | 0.57 (2) | 6.25 |
| W- V | -1126 / 7583 | -39.5 | -39.5 | 0.90 (2) | 6.25 |
| V- U | -951 / 6373 | -39.5 | -39.5 | 0.89 (2) | 6.25 |
| U- T | -948 / 6577 | -39.5 | -39.5 | 0.91 (3) | 6.25 |
| T- S | -1073 / 7526 | -39.5 | -39.5 | 0.89 (3) | 6.25 |
| S- R | -592 / 4378 | -39.5 | -39.5 | 0.60 (3) | 6.25 |
| R- Q | -263 / 2379 | -39.5 | -39.5 | 0.38 (3) | 6.25 |
| Q- P | -263 / 2379 | -39.5 | -39.5 | 0.38 (3) | 6.25 |
| P- O | 0 / 0 | -39.5 | -39.5 | 0.12 (5) | 10.00 |
| O- N | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| Z- B | -326 / 134 | 0.19 (9) |
| B- X | -516 / 3183 | 0.72 (3) |
| X- C | -2408 / 504 | 0.46 (3) |
| C- W | -365 / 2260 | 0.51 (3) |
| W- D | -6774 / 1060 | 0.71 (2) |
| D- V | -897 / 5897 | 0.95 (2) |
| V- E | -603 / 205 | 0.46 (10) |
| E- U | -172 / 1170 | 0.26 (3) |
| U- G | -1073 / 314 | 0.82 (10) |
| U- H | -131 / 892 | 0.20 (2) |
| T- H | -683 / 207 | 0.53 (2) |
| T- I | -907 / 5994 | 0.96 (3) |
| S- I | -6575 / 1035 | 0.69 (2) |
| S- K | -352 / 2147 | 0.48 (2) |
| R- K | -2350 / 510 | 0.45 (2) |
| R- L | -529 / 3271 | 0.74 (2) |
| P- L | -346 / 137 | 0.20 (10) |
| A- Z | -272 / 2442 | 0.55 (2) |
| P- M | -272 / 2442 | 0.55 (3) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN} AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.58")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 739 (0.83")

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=1.00/1.00 (E-G:2) , BC=0.91/1.00 (T-U:3) , WB=0.96/1.00 (I-T:3) , SSI=0.36/1.00 (D-E:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.90 (X) (INPUT = 0.90 )
JSI METAL= 0.78 (T) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343663 | H05TA | | 1 | TRUSS DESC. JT 45147 | E22052053 |

Alpha Roof Truss, Maple

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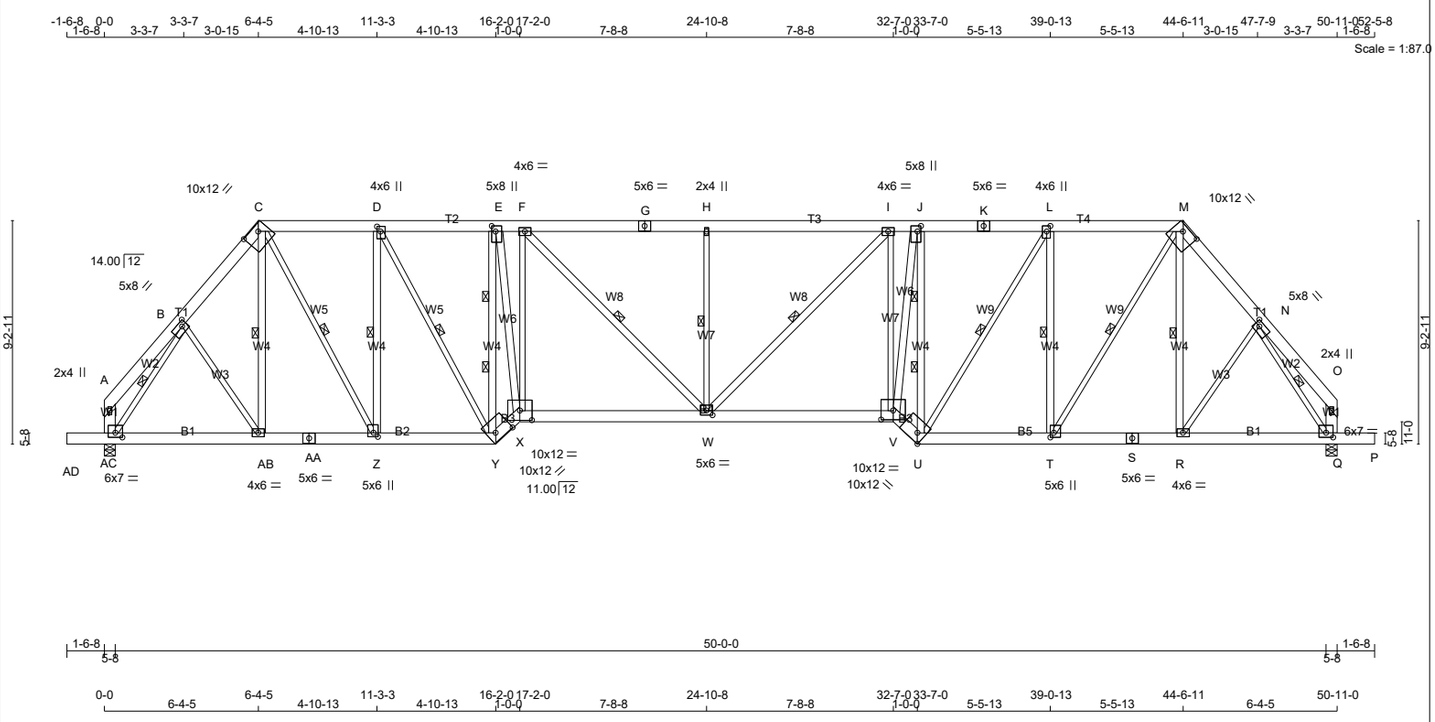





TOTAL WEIGHT = 374 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x6 | DRY | No.2 | SPF |
| C - G | 2x6 | DRY | No.2 | SPF |
| G - K | 2x6 | DRY | No.2 | SPF |
| K - M | 2x6 | DRY | No.2 | SPF |
| M - O | 2x6 | DRY | No.2 | SPF |
| AC- A | 2x6 | DRY | No.2 | SPF |
| Q - O | 2x6 | DRY | No.2 | SPF |
| AD- AA | 2x6 | DRY | No.2 | SPF |
| AA- Y | 2x6 | DRY | No.2 | SPF |
| Y - X | 2x6 | DRY | No.2 | SPF |
| X - V | 2x6 | DRY | No.2 | SPF |
| V - U | 2x6 | DRY | No.2 | SPF |
| U - S | 2x6 | DRY | No.2 | SPF |
| S - P | 2x6 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| AB- C | 2x4 | DRY | 1650F 1.5E | SPF |
| Z - D | 2x4 | DRY | 1650F 1.5E | SPF |
| Y - E | 2x4 | DRY | 1650F 1.5E | SPF |
| E - X | 2x4 | DRY | No.2 | SPF |
| F - W | 2x4 | DRY | No.2 | SPF |
| W - I | 2x4 | DRY | No.2 | SPF |
| V - J | 2x4 | DRY | No.2 | SPF |
| U - J | 2x4 | DRY | 1650F 1.5E | SPF |
| T - L | 2x4 | DRY | 1650F 1.5E | SPF |
| R - M | 2x4 | DRY | 1650F 1.5E | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMV+p | MT20 | 2.0 | 4.0 | | |
| B | TMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.50 |
| C | TTWW-h | MT20 | 10.0 | 12.0 | 3.00 | 7.50 |
| D | TMWW+t | MT20 | 4.0 | 6.0 | 2.50 | 1.75 |
| E | TMWW+t | MT20 | 5.0 | 8.0 | 2.75 | 2.00 |
| F | TMWW-t | MT20 | 4.0 | 6.0 | | |
| G | TS-t | MT20 | 5.0 | 6.0 | | |
| H | TMW+w | MT20 | 2.0 | 4.0 | | |
| I | TMWW-t | MT20 | 4.0 | 6.0 | | |
| J | TMWW+t | MT20 | 5.0 | 8.0 | 2.75 | 1.75 |
| K | TS-t | MT20 | 5.0 | 6.0 | | |
| L | TMWW+t | MT20 | 4.0 | 6.0 | 2.75 | 1.75 |
| M | TTWW-h | MT20 | 10.0 | 12.0 | 2.75 | 7.25 |
| N | TMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.50 |
| O | TMV+p | MT20 | 2.0 | 4.0 | | |
| Q | BMVW1-t | MT20 | 6.0 | 7.0 | 2.25 | 3.50 |
| R | BMWW-t | MT20 | 4.0 | 6.0 | | |
| S | BS-t | MT20 | 5.0 | 6.0 | | |
| T | BMWW+t | MT20 | 5.0 | 6.0 | 2.25 | 1.75 |
| U | BBWW-h | MT20 | 10.0 | 12.0 | 4.00 | Edge |
| V | BBWW-l | MT20 | 10.0 | 12.0 | 4.50 | 6.00 |
| W | BMWWW-t | MT20 | 5.0 | 6.0 | 2.25 | 3.00 |
| X | BBWW-l | MT20 | 10.0 | 12.0 | 4.75 | 6.00 |
| Y | BBWW-h | MT20 | 10.0 | 12.0 | 3.75 | 8.00 |
| Z | BMWW+t | MT20 | 5.0 | 6.0 | 2.00 | 2.25 |
| AA | BS-t | MT20 | 5.0 | 6.0 | | |
| AB | BMWW-t | MT20 | 4.0 | 6.0 | | |
| AC | BMVW1-t | MT20 | 6.0 | 7.0 | 2.25 | 3.50 |

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**

END VERTICALS ARE NOT EXPOSED TO WIND.

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| AC | 3637 | 0 | 3860 | -211 | -576 | 5-8 | 5-4 |
| Q | 3637 | 0 | 3860 | 0 | -576 | 5-8 | 5-4 |

PROVIDE ANCHORAGE AT BEARING JOINT AC FOR 576 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT Q FOR 576 LBS FACTORED UPLIFT

PROVIDE FOR 211 LBS FACTORED HORIZONTAL REACTION AT JOINTAC

ALLOW FOR 0.3" OF HORIZONTAL MOVEMENT DUE TO TOTAL LOAD

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| AC | 2734 | 1592 / 0 | 567 / 0 | 0 / 0 | 403 / -877 | 724 / 0 | 0 / 0 |
| Q | 2734 | 1592 / 0 | 567 / 0 | 0 / 0 | 339 / -877 | 724 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| AC | --- | 0 / 0 | 0 / 0 | 0 / 0 | 151 / -151 | 0 / 0 | 0 /0 |

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

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 2.80 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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 C-AB, C-Z, D-Z, D-Y, F-W, H-W, I-W, L-U, L-T, M-T, M-R, B-AC, N-Q.

2 LATERAL BRACE(S) AT 1/ 3 LENGTH OF E-Y, J-U.

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: (18)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -36 / 104 | -95.2 | -95.2 | 0.08 (2) | 6.25 |
| B- C | -3682 / 730 | -95.2 | -95.2 | 0.16 (2) | 4.36 |
| C- D | -3733 / 759 | -95.2 | -95.2 | 0.25 (2) | 4.27 |
| D- E | -4725 / 906 | -95.2 | -95.2 | 0.47 (2) | 3.62 |
| E- F | -5381 / 1005 | -95.2 | -95.2 | 0.48 (2) | 3.38 |
| F- G | -6098 / 1086 | -95.2 | -95.2 | 0.89 (2) | 2.80 |
| G- H | -6098 / 1086 | -95.2 | -95.2 | 0.89 (2) | 2.80 |
| H- I | -6098 / 1086 | -95.2 | -95.2 | 0.89 (2) | 2.80 |
| I- J | -5552 / 1013 | -95.2 | -95.2 | 0.41 (3) | 3.42 |
| J- K | -4889 / 929 | -95.2 | -95.2 | 0.40 (3) | 3.66 |
| K- L | -4889 / 929 | -95.2 | -95.2 | 0.40 (3) | 3.66 |
| L- M | -3880 / 780 | -95.2 | -95.2 | 0.32 (3) | 4.13 |
| M- N | -3682 / 730 | -95.2 | -95.2 | 0.16 (3) | 4.36 |
| N- O | -34 / 103 | -95.2 | -95.2 | 0.08 (3) | 6.25 |
| AC- A | -164 / 120 | 0.0 | 0.0 | 0.01 (13) | 7.81 |
| Q- O | -162 / 120 | 0.0 | 0.0 | 0.01 (14) | 7.81 |
| AD-AC | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |
| AC-AB | -437 / 2171 | -39.5 | -39.5 | 0.36 (2) | 6.25 |
| AB-AA | -332 / 2376 | -39.5 | -39.5 | 0.38 (2) | 6.25 |
| AA- Z | -332 / 2376 | -39.5 | -39.5 | 0.38 (2) | 6.25 |
| Z- Y | -542 / 3733 | -39.5 | -39.5 | 0.50 (2) | 6.25 |
| Y- X | -950 / 6526 | -39.5 | -39.5 | 0.77 (2) | 6.25 |
| X- W | -788 / 5388 | -39.5 | -39.5 | 0.79 (2) | 6.25 |
| W- V | -776 / 5560 | -39.5 | -39.5 | 0.81 (3) | 6.25 |
| V- U | -893 / 6500 | -39.5 | -39.5 | 0.77 (3) | 6.25 |
| U- T | -500 / 3880 | -39.5 | -39.5 | 0.53 (3) | 6.25 |
| T- S | -244 / 2376 | -39.5 | -39.5 | 0.38 (3) | 6.25 |
| S- R | -244 / 2376 | -39.5 | -39.5 | 0.38 (3) | 6.25 |
| R- Q | -303 / 2171 | -39.5 | -39.5 | 0.36 (3) | 6.25 |
| Q- P | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| AB- C | 0 / 500 | 0.11 (3) |
| C- Z | -191 / 164 | 0.05 (10) |
| Z- D | -472 / 2837 | 0.64 (3) |
| D- Y | -2320 / 480 | 0.62 (3) |
| Y- E | -342 / 2099 | 0.47 (3) |
| E- X | -6044 / 930 | 0.79 (3) |
| X- F | -768 / 5115 | 0.82 (2) |
| F- W | -579 / 211 | 0.69 (10) |
| W- H | -169 / 1110 | 0.18 (3) |
| W- I | -1086 / 316 | 0.42 (3) |
| V- I | -131 / 855 | 0.14 (2) |
| V- J | -679 / 214 | 0.82 (2) |
| U- J | -786 / 5244 | 0.84 (2) |
| U- L | -5867 / 913 | 0.77 (2) |
| T- L | -327 / 1971 | 0.44 (2) |
| T- M | -2264 / 487 | 0.60 (2) |
| R- M | -480 / 2895 | 0.65 (2) |
| R- N | -168 / 192 | 0.04 (9) |
| AC- B | -28 / 500 | 0.11 (2) |
| N- Q | -4032 / 562 | 0.93 (2) |
| | -4032 / 562 | 0.93 (3) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN) AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | | |
|---|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.50")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 854 (0.72")

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=0.89/1.00 (F-H:2) , BC=0.81/1.00 (V-W:3) , WB=0.93/1.00 (N-Q:3) , SSI=0.39/1.00 (E-F:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (Q) (INPUT = 0.90 )
JSI METAL= 0.70 (N) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343663 | H06TA | | 1 | TRUSS DESC. JT 45147 | E22052054 |

Alpha Roof Truss, Maple

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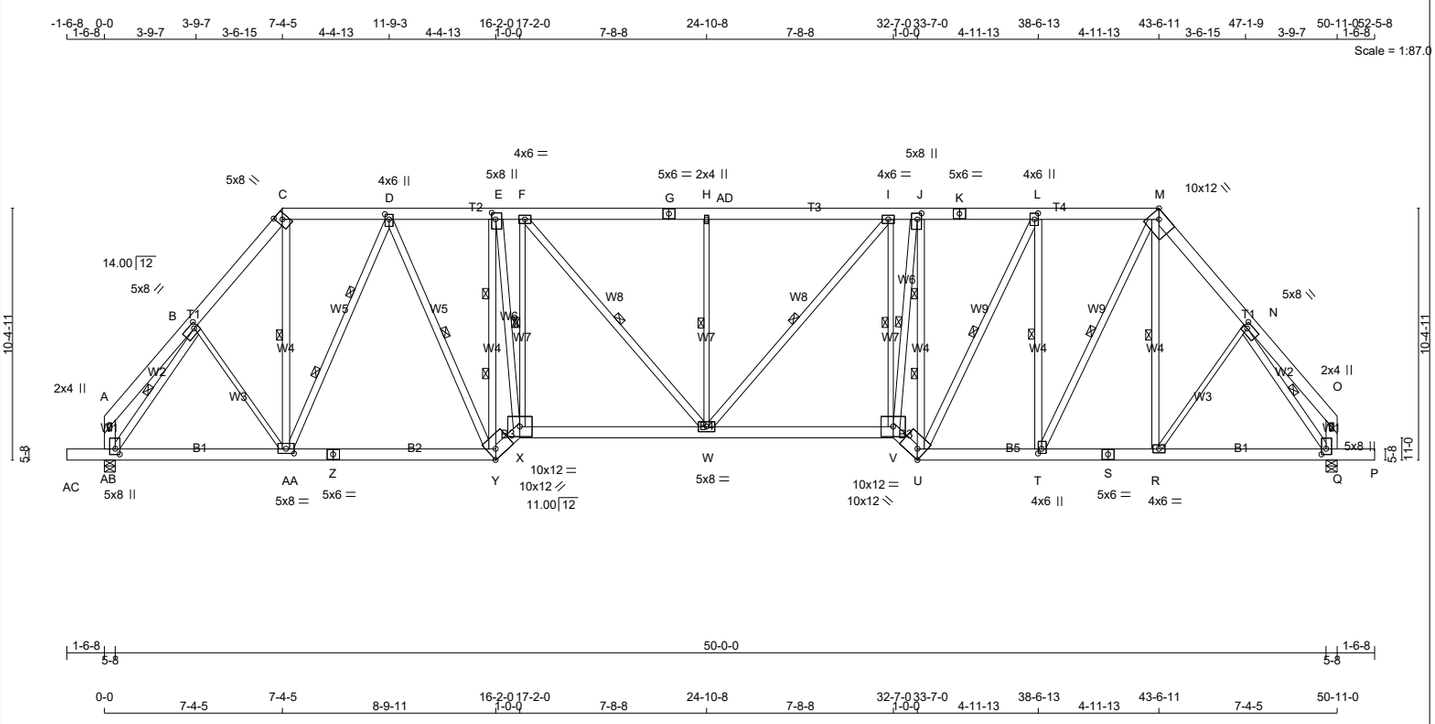





TOTAL WEIGHT = 2 X 403 = 806 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x6 | DRY | No.2 | SPF |
| C - G | 2x6 | DRY | No.2 | SPF |
| G - K | 2x6 | DRY | No.2 | SPF |
| K - M | 2x6 | DRY | No.2 | SPF |
| M - O | 2x6 | DRY | No.2 | SPF |
| AB- A | 2x6 | DRY | No.2 | SPF |
| Q - O | 2x6 | DRY | No.2 | SPF |
| AC- Z | 2x6 | DRY | No.2 | SPF |
| Z - Y | 2x6 | DRY | No.2 | SPF |
| Y - X | 2x6 | DRY | No.2 | SPF |
| X - V | 2x6 | DRY | No.2 | SPF |
| V - U | 2x6 | DRY | No.2 | SPF |
| U - S | 2x6 | DRY | No.2 | SPF |
| S - P | 2x6 | DRY | No.2 | SPF |
| ALL WEBS | 2x4 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| B - AA | 2x3 | DRY | No.2 | SPF |
| AA- C | 2x4 | DRY | 1650F 1.5E | SPF |
| Y - E | 2x4 | DRY | 1650F 1.5E | SPF |
| X - F | 2x3 | DRY | No.2 | SPF |
| W - H | 2x3 | DRY | No.2 | SPF |
| V - I | 2x3 | DRY | No.2 | SPF |
| U - J | 2x4 | DRY | 1650F 1.5E | SPF |
| T - L | 2x4 | DRY | 1650F 1.5E | SPF |
| R - M | 2x4 | DRY | 1650F 1.5E | SPF |
| R - N | 2x3 | 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 | | |
| B | TMWW-t | MT20 | 5.0 | 8.0 | 2.50 | 2.00 |
| C | TTW+h | MT20 | 5.0 | 8.0 | Edge | |
| D | TMWW+t | MT20 | 4.0 | 6.0 | 2.50 | 2.00 |
| E | TMWW+t | MT20 | 5.0 | 8.0 | 3.25 | 2.00 |
| F | TMWW-t | MT20 | 4.0 | 6.0 | | |
| G | TS-t | MT20 | 5.0 | 6.0 | | |
| H | TMW+w | MT20 | 2.0 | 4.0 | | |
| I | TMWW-t | MT20 | 4.0 | 6.0 | | |
| J | TMWW+t | MT20 | 5.0 | 8.0 | 3.00 | 2.00 |
| K | TS-t | MT20 | 5.0 | 6.0 | | |
| L | TMWW+t | MT20 | 4.0 | 6.0 | 3.00 | 1.75 |
| M | TTWW-h | MT20 | 10.0 | 12.0 | Edge | 4.25 |
| N | TMWW-t | MT20 | 5.0 | 8.0 | 2.50 | 2.00 |
| O | TMV+p | MT20 | 2.0 | 4.0 | | |
| Q | BMVW1+p | MT20 | 5.0 | 8.0 | 2.75 | 2.25 |
| R | BMWW-t | MT20 | 4.0 | 6.0 | | |
| S | BS-t | MT20 | 5.0 | 6.0 | | |
| T | BMWW+t | MT20 | 4.0 | 6.0 | 2.25 | 1.75 |
| U | BBWW-h | MT20 | 10.0 | 12.0 | 4.00 | Edge |
| V | BBWW-l | MT20 | 10.0 | 12.0 | | |
| W | BMWWW-t | MT20 | 5.0 | 8.0 | | |
| X | BBWW-l | MT20 | 10.0 | 12.0 | | |
| Y | BBWW-h | MT20 | 10.0 | 12.0 | 4.00 | Edge |
| Z | BS-t | MT20 | 5.0 | 6.0 | | |
| AA | BMWWW-t | MT20 | 5.0 | 8.0 | 2.25 | 4.00 |
| AB | BMVW1+p | MT20 | 5.0 | 8.0 | 2.75 | 2.25 |

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**

END VERTICALS ARE NOT EXPOSED TO WIND.

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| AB | 3908 | 0 | 3908 | -245 | -269 | 5-8 | 4-12 |
| Q | 3908 | 0 | 3908 | 0 | -269 | 5-8 | 4-12 |

PROVIDE ANCHORAGE AT BEARING JOINT AB FOR 269 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT Q FOR 269 LBS FACTORED UPLIFT

PROVIDE FOR 245 LBS FACTORED HORIZONTAL REACTION AT JOINTAB

ALLOW FOR 0.3" OF HORIZONTAL MOVEMENT DUE TO TOTAL LOAD

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| AB | 2951 | 1444 / 0 | 567 / 0 | 0 / 0 | 140 / -797 | 941 / 0 | 0 / 0 |
| Q | 2951 | 1444 / 0 | 567 / 0 | 0 / 0 | 140 / -797 | 941 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| AB | --- | 0 / 0 | 0 / 0 | 0 / 0 | 175 / -175 | 0 / 0 | 0 /0 |

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

**BRACING**

FOR SECTION C-M, MAX. UNBRACED TOP CHORD LENGTH = 2.00 FT.
FOR OTHER SECTIONS, MAX. UNBRACED TOP CHORD LENGTH = 4.31 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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 C-AA, E-X, F-X, F-W, H-W, I-W, I-V, J-V, L-U, L-T, M-T, M-R, B-AB, N-Q, D-Y.
2 LATERAL BRACE(S) AT 1/ 3 LENGTH OF E-Y, J-U, D-AA.

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: (18)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -28 / 116 | -95.2 | -95.2 | 0.10 (13) | 6.25 |
| B- C | -3752 / 392 | -95.2 | -95.2 | 0.18 (1) | 4.31 |
| C- D | -2455 / 343 | -110.2 | -110.2 | 0.17 (2) | 2.00 |
| D- E | -4257 / 386 | -110.2 | -110.2 | 0.46 (1) | 2.00 |
| E- F | -4779 / 402 | -110.2 | -110.2 | 0.47 (1) | 2.00 |
| F- G | -5444 / 322 | -110.2 | -110.2 | 0.83 (1) | 2.00 |
| G- H | -5444 / 322 | -110.2 | -110.2 | 0.83 (1) | 2.00 |
| H-AD | -5444 / 322 | -110.2 | -110.2 | 0.83 (1) | 2.00 |
| AD- I | -5444 / 322 | -110.2 | -110.2 | 0.83 (1) | 2.00 |
| I- J | -4934 / 381 | -110.2 | -110.2 | 0.39 (1) | 2.00 |
| J- K | -4406 / 381 | -110.2 | -110.2 | 0.39 (1) | 2.00 |
| K- L | -4406 / 381 | -110.2 | -110.2 | 0.39 (1) | 2.00 |
| L- M | -3581 / 383 | -110.2 | -110.2 | 0.27 (3) | 2.00 |
| M- N | -3745 / 399 | -95.2 | -95.2 | 0.17 (1) | 4.33 |
| N- O | -23 / 116 | -95.2 | -95.2 | 0.10 (14) | 6.25 |
| AB- A | -181 / 134 | 0.0 | 0.0 | 0.01 (13) | 7.81 |
| Q- O | -171 / 133 | 0.0 | 0.0 | 0.01 (14) | 7.81 |
| AC-AB | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |
| AB-AA | -258 / 2271 | -39.5 | -39.5 | 0.49 (4) | 6.25 |
| AA- Z | -139 / 3432 | -39.5 | -39.5 | 0.61 (4) | 6.25 |
| Z- Y | -139 / 3432 | -39.5 | -39.5 | 0.61 (4) | 6.25 |
| Y- X | -185 / 5873 | -39.5 | -39.5 | 0.70 (1) | 6.25 |
| X- W | -152 / 4785 | -39.5 | -39.5 | 0.72 (1) | 6.25 |
| W- V | 0 / 4941 | -39.5 | -39.5 | 0.74 (1) | 10.00 |
| V- U | 0 / 5868 | -39.5 | -39.5 | 0.70 (1) | 10.00 |
| U- T | 0 / 3581 | -39.5 | -39.5 | 0.48 (1) | 10.00 |
| T- S | 0 / 2411 | -39.5 | -39.5 | 0.42 (4) | 10.00 |
| S- R | 0 / 2411 | -39.5 | -39.5 | 0.42 (4) | 10.00 |
| R- Q | -105 / 2270 | -39.5 | -39.5 | 0.40 (4) | 6.25 |
| Q- P | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| B-AA | 0 / 293 | 0.07 (6) |
| AA- C | -198 / 2451 | 0.29 (1) |
| Y- E | -5648 / 165 | 0.92 (1) |
| E- X | -146 / 4647 | 0.75 (1) |
| X- F | -510 / 114 | 0.27 (8) |
| F- W | -133 / 1353 | 0.22 (3) |
| W- H | -1065 / 145 | 0.58 (1) |
| W- I | -144 / 1236 | 0.20 (2) |
| V- I | -632 / 110 | 0.34 (1) |
| V- J | -40 / 4804 | 0.77 (1) |
| U- J | -5469 / 83 | 0.89 (1) |
| U- L | -81 / 1832 | 0.29 (1) |
| T- L | -2162 / 133 | 0.79 (1) |
| T- M | -82 / 2596 | 0.42 (1) |
| R- M | -125 / 232 | 0.04 (14) |
| R- N | 0 / 282 | 0.06 (5) |
| AB- B | -4112 / 182 | 0.81 (1) |
| N- Q | -4110 / 190 | 0.81 (1) |
| AA- D | -2479 / 117 | 0.67 (1) |
| D- Y | -51 / 2029 | 0.33 (1) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN} AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | 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 HEEL HEIGHTS OF 0-0 AND 0-0 AND AN ADDITIONAL DEAD LOAD OF 6.0 P.S.F.

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.39")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 951 (0.64")

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=0.83/1.00 (F-H:1) , BC=0.74/1.00 (V-W:1) , WB=0.92/1.00 (E-Y:1) , SSI=0.43/1.00 (E-F:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (AB) (INPUT = 0.90 )
JSI METAL= 0.81 (D) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H06 | | 1 | TRUSS DESC. JT 45147 | E22052060 |

Alpha Roof Truss, Maple

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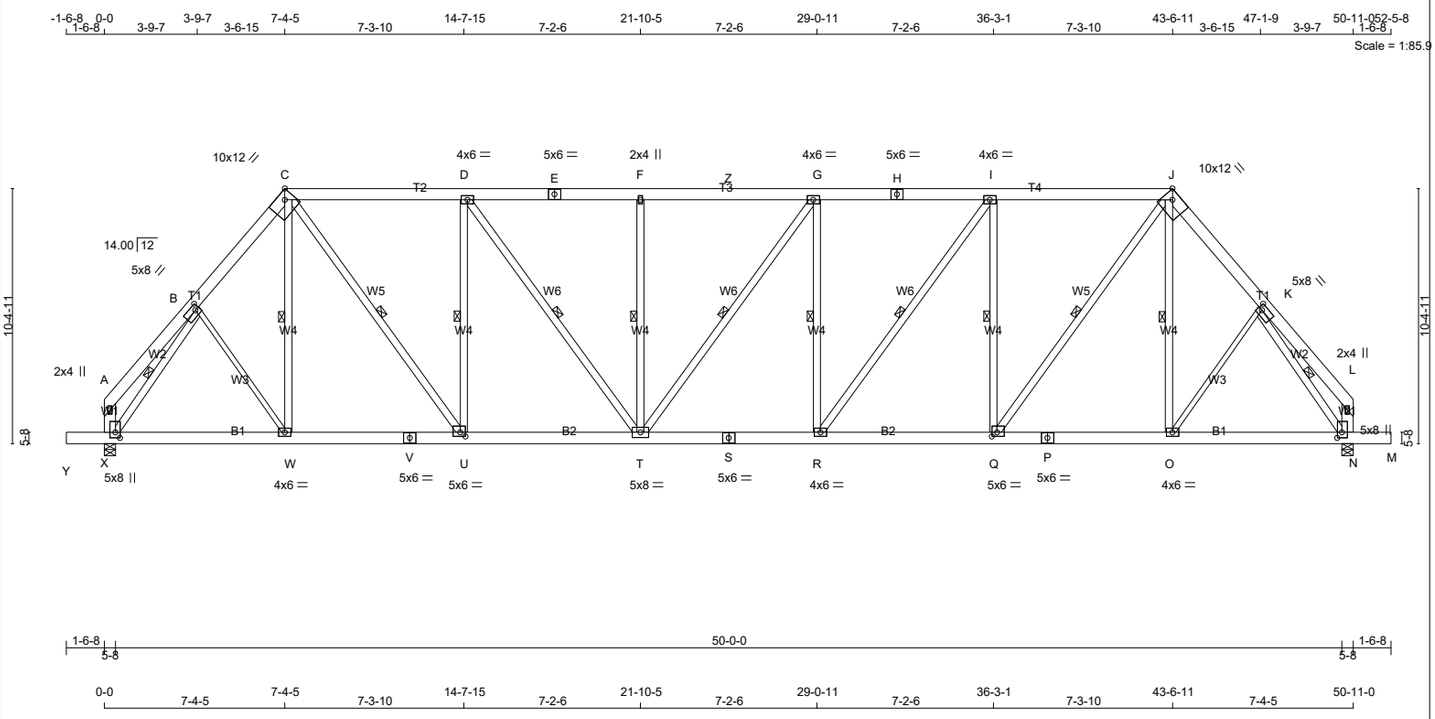





TOTAL WEIGHT = 16 X 364 = 5817 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x6 | DRY | No.2 | SPF |
| C - E | 2x6 | DRY | No.2 | SPF |
| E - H | 2x6 | DRY | No.2 | SPF |
| H - J | 2x6 | DRY | No.2 | SPF |
| J - L | 2x6 | DRY | No.2 | SPF |
| X - A | 2x6 | DRY | No.2 | SPF |
| N - L | 2x6 | DRY | No.2 | SPF |
| Y - V | 2x6 | DRY | 1650F 1.5E | SPF |
| V - S | 2x6 | DRY | 1650F 1.5E | SPF |
| S - P | 2x6 | DRY | 1650F 1.5E | SPF |
| P - M | 2x6 | DRY | 1650F 1.5E | SPF |
| ALL WEBS | 2x4 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| B - W | 2x3 | DRY | No.2 | SPF |
| O - K | 2x3 | 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 | | |
| B | TMWW-t | MT20 | 5.0 | 8.0 | 2.50 | 2.00 |
| C | TTWW-h | MT20 | 10.0 | 12.0 | Edge | 4.25 |
| D, G, I | | | | | | |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TS-t | MT20 | 5.0 | 6.0 | | |
| F | TMW+w | MT20 | 2.0 | 4.0 | | |
| H | TS-t | MT20 | 5.0 | 6.0 | | |
| J | TTWW-h | MT20 | 10.0 | 12.0 | Edge | 4.25 |
| K | TMWW-t | MT20 | 5.0 | 8.0 | 2.50 | 2.00 |
| L | TMV+p | MT20 | 2.0 | 4.0 | | |
| N | BMVW1+p | MT20 | 5.0 | 8.0 | 2.75 | 2.25 |
| O, R, W | | | | | | |
| O | BMWW-t | MT20 | 4.0 | 6.0 | | |
| P, S, V | | | | | | |
| P | BS-t | MT20 | 5.0 | 6.0 | | |
| Q | BMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 2.50 |
| T | BMWWW-t | MT20 | 5.0 | 8.0 | | |
| U | BMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 2.50 |
| X | BMVW1+p | MT20 | 5.0 | 8.0 | 2.75 | 2.25 |

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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| X | 3908 | 0 | 3908 | -294 | -269 | 5-8 | 4-12 |
| N | 3908 | 0 | 3908 | 0 | -269 | 5-8 | 4-12 |

PROVIDE ANCHORAGE AT BEARING JOINT X FOR 269 LBS FACTORED UPLIFT
PROVIDE ANCHORAGE AT BEARING JOINT N FOR 269 LBS FACTORED UPLIFT

PROVIDE FOR 294 LBS FACTORED HORIZONTAL REACTION AT JOINTX

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| X | 2951 | 1444 / 0 | 567 / 0 | 0 / 0 | 140 / -797 | 941 / 0 | 0 / 0 |
| N | 2951 | 1444 / 0 | 567 / 0 | 0 / 0 | 140 / -797 | 941 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| X | --- | 0 / 0 | 0 / 0 | 0 / 0 | 210 / -210 | 0 / 0 | 0 /0 |

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

**BRACING**

FOR SECTION C-J, MAX. UNBRACED TOP CHORD LENGTH = 2.00 FT.
FOR OTHER SECTIONS, MAX. UNBRACED TOP CHORD LENGTH = 4.33 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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 C-W, C-U, D-U, D-T, F-T, G-T, G-R, I-R, I-Q, J-Q, J-O, B-X, K-N.

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: (18)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -34 / 141 | -95.2 | -95.2 | 0.11 (13) | 6.25 |
| B- C | -3749 / 401 | -95.2 | -95.2 | 0.17 (1) | 4.33 |
| C- D | -4038 / 392 | -110.2 | -110.2 | 0.58 (2) | 2.00 |
| D- E | -4799 / 353 | -110.2 | -110.2 | 0.61 (2) | 2.00 |
| E- F | -4799 / 353 | -110.2 | -110.2 | 0.61 (2) | 2.00 |
| F- Z | -4799 / 353 | -110.2 | -110.2 | 0.49 (1) | 2.00 |
| Z- G | -4799 / 353 | -110.2 | -110.2 | 0.49 (1) | 2.00 |
| G- H | -4803 / 354 | -110.2 | -110.2 | 0.60 (1) | 2.00 |
| H- I | -4803 / 354 | -110.2 | -110.2 | 0.60 (1) | 2.00 |
| I- J | -4037 / 392 | -110.2 | -110.2 | 0.58 (3) | 2.00 |
| J- K | -3749 / 401 | -95.2 | -95.2 | 0.17 (1) | 4.33 |
| K- L | -34 / 141 | -95.2 | -95.2 | 0.11 (14) | 6.25 |
| X- A | -179 / 152 | 0.0 | 0.0 | 0.02 (13) | 7.81 |
| N- L | -179 / 152 | 0.0 | 0.0 | 0.02 (14) | 7.81 |
| Y- X | 0 / 0 | -134.7 | -134.7 | 0.07 (1) | 10.00 |
| X- W | -232 / 2272 | -39.5 | -39.5 | 0.27 (4) | 6.25 |
| W- V | -64 / 2414 | -39.5 | -39.5 | 0.29 (4) | 6.25 |
| V- U | -64 / 2414 | -39.5 | -39.5 | 0.29 (4) | 6.25 |
| U- T | -110 / 4038 | -39.5 | -39.5 | 0.37 (1) | 6.25 |
| T- S | 0 / 4803 | -39.5 | -39.5 | 0.42 (1) | 10.00 |
| S- R | 0 / 4803 | -39.5 | -39.5 | 0.42 (1) | 10.00 |
| R- Q | 0 / 4037 | -39.5 | -39.5 | 0.37 (1) | 10.00 |
| Q- P | 0 / 2414 | -39.5 | -39.5 | 0.29 (4) | 10.00 |
| P- O | 0 / 2414 | -39.5 | -39.5 | 0.29 (4) | 10.00 |
| O- N | -75 / 2272 | -39.5 | -39.5 | 0.28 (4) | 6.25 |
| N- M | 0 / 0 | -134.7 | -134.7 | 0.07 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| B- W | 0 / 285 | 0.06 (6) |
| W- C | -117 / 275 | 0.06 (13) |
| C- U | -77 / 2731 | 0.44 (1) |
| U- D | -1917 / 151 | 0.94 (1) |
| D- T | -107 / 1350 | 0.22 (3) |
| T- F | -806 / 164 | 0.40 (2) |
| T- G | -671 / 661 | 0.57 (3) |
| R- G | -807 / 183 | 0.40 (2) |
| R- I | -108 / 1354 | 0.22 (2) |
| Q- I | -1920 / 151 | 0.95 (1) |
| Q- J | -76 / 2729 | 0.44 (1) |
| O- J | -118 / 276 | 0.06 (14) |
| O- K | 0 / 286 | 0.06 (5) |
| X- B | -4114 / 165 | 0.81 (1) |
| K- N | -4114 / 166 | 0.81 (1) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN) AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | 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 HEEL HEIGHTS OF 0-0 AND 0-0 AND AN ADDITIONAL DEAD LOAD OF 6.0 P.S.F.

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.20")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.33")

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=0.61/1.00 (D-F:2) , BC=0.42/1.00 (R-T:1) , WB=0.95/1.00 (I-Q:1) , SSI=0.33/1.00 (C-D:2)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (N) (INPUT = 0.90 )
JSI METAL= 0.93 (S) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H07 | | 2 | TRUSS DESC. JT 45147 | E22052061 |

Alpha Roof Truss, Maple

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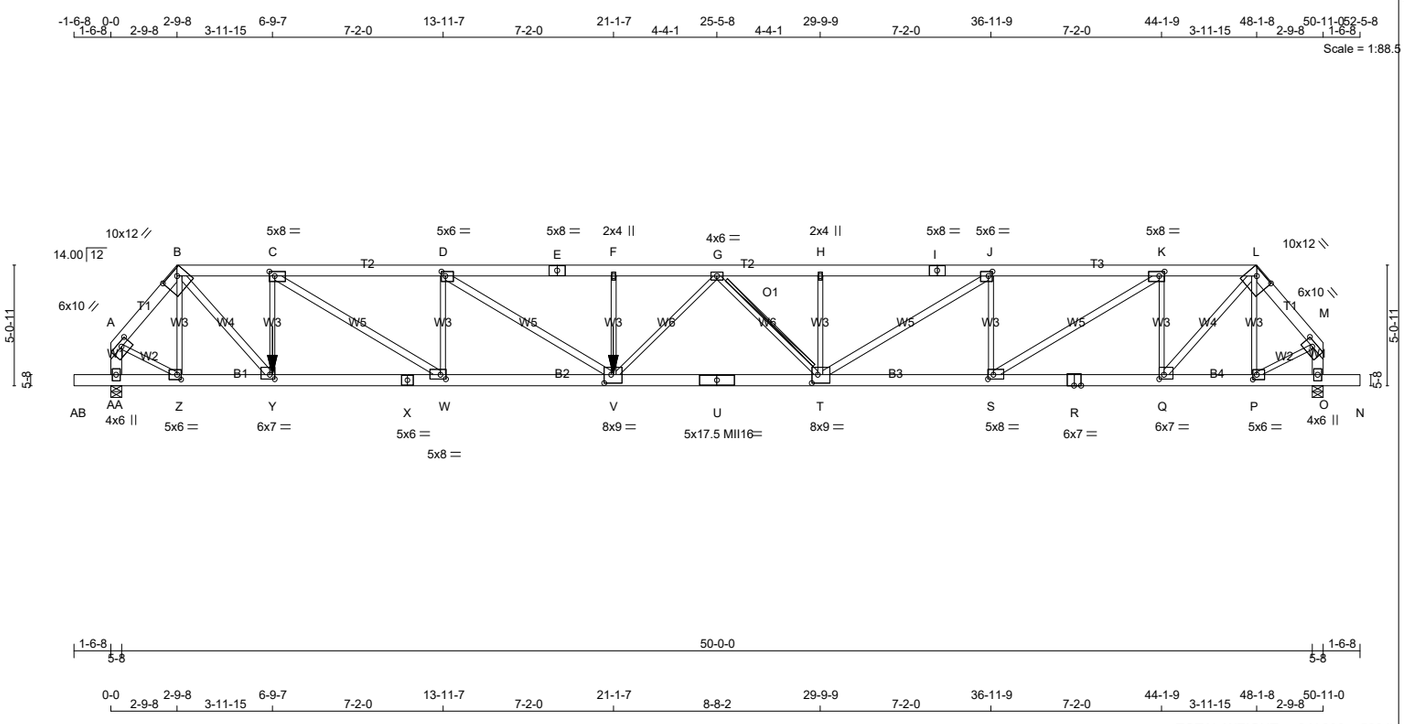


TOTAL WEIGHT = 2 X 290 = 580 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x6 | DRY | No.2 | SPF |
| B - E | 2x6 | DRY | 1650F 1.5E | SPF |
| E - I | 2x6 | DRY | 1650F 1.5E | SPF |
| I - L | 2x6 | DRY | 1650F 1.5E | SPF |
| L - M | 2x6 | DRY | No.2 | SPF |
| AA- A | 2x6 | DRY | No.2 | SPF |
| O - M | 2x6 | DRY | No.2 | SPF |
| AB- X | 2x6 | DRY | 2100F 1.8E | SPF |
| X - U | 2x6 | DRY | 2100F 1.8E | SPF |
| U - R | 2x6 | DRY | 2100F 1.8E | SPF |
| R - N | 2x6 | DRY | 2100F 1.8E | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| B - Y | 2x4 | DRY | No.2 | SPF |
| C - W | 2x4 | DRY | No.2 | SPF |
| D - V | 2x4 | DRY | No.2 | SPF |
| T - J | 2x4 | DRY | No.2 | SPF |
| S - K | 2x4 | DRY | No.2 | SPF |
| Q - L | 2x4 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

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

| CHORDS #ROWS | | SURFACE SPACING (IN) | LOAD(PLF) |
|---|---|---|---|
| TOP CHORDS : (0.122"X3") SPIRAL NAILS | | | |
| A- B | 2 | 12 | TOP |
| B- E | 2 | 12 | TOP |
| E- I | 2 | 12 | TOP |
| I- L | 2 | 12 | TOP |
| L- M | 2 | 12 | TOP |
| AA- A | 2 | 12 | TOP |
| O- M | 2 | 12 | TOP |
| BOTTOM CHORDS : (0.122"X3") SPIRAL NAILS | | | |
| AB- X | 2 | 12 | SIDE(227.4) |
| X- U | 2 | 12 | SIDE(227.4) |
| R- U | 2 | 12 | TOP |
| R- N | 2 | 12 | TOP |
| WEBS : (0.122"X3") SPIRAL NAILS | | | |
| C- Y | 1 | 6 | SIDE(179.8) |
| F- V | 1 | 2 | SIDE(1017.8) |
| 2x3 | 1 | 6 | |
| 2x4 | 1 | 6 | |

NAILS TO BE DRIVEN FROM ONE SIDE ONLY.

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

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

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

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 6.0 | 10.0 | 2.25 | 4.50 |
| B | TTWW-h | MT20 | 10.0 | 12.0 | 3.00 | 7.50 |
| C | TMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.75 |
| D | TMWW-t | MT20 | 5.0 | 6.0 | 2.25 | 2.00 |
| E | TS-t | MT20 | 5.0 | 8.0 | | |

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| AA | 7618 | 0 | 7915 | -142 | 0 | 5-8 | 4-12 |
| O | 5763 | 0 | 6059 | 0 | -65 | 5-8 | 2-14 |

PROVIDE ANCHORAGE AT BEARING JOINT O FOR 150 LBS FACTORED UPLIFT

PROVIDE FOR 142 LBS FACTORED HORIZONTAL REACTION AT JOINTAA

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | SNOW | MAX /MIN. COMPONENT REACTIONS LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| AA | 5572 | 3379 / 0 | 567 / 0 | 0 / 0 | 416 / -888 | 1823 / 0 | 0 / 0 |
| O | 4249 | 2570 / 0 | 567 / 0 | 0 / 0 | 391 / -888 | 1309 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| AA | --- | 0 / 0 | 0 / 0 | 0 / 0 | 101 / -101 | 0 / 0 | 0 /0 |

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

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 2.65 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 FT OR RIGID CEILING DIRECTLY APPLIED.

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

2x4 DRY SPF No.2 T-BRACE AT G-T

FASTEN T AND I-BRACES TO NARROW EDGE OF WEB WITH ONE ROW PER PLY OF 3" COMMON WIRE NAILS @ 6" O.C. WITH 3" MINIMUM END DISTANCE. BRACE MUST COVER 90% OF WEB LENGTH.

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: (18)

CHORDS

| MEMB. | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| FR-TO | | | | | | |
| A- B | -7312 / 0 | -95.2 | -95.2 | 0.10 (2) | 4.39 | |
| B- C | -10742 / 0 | -95.2 | -95.2 | 0.16 (2) | 4.22 | |
| C- D | -18187 / 0 | -95.2 | -95.2 | 0.44 (2) | 3.21 | |
| D- E | -23810 / 0 | -95.2 | -95.2 | 0.72 (2) | 2.65 | |
| E- F | -23810 / 0 | -95.2 | -95.2 | 0.72 (2) | 2.65 | |
| F- G | -23810 / 0 | -95.2 | -95.2 | 0.53 (2) | 2.73 | |
| G- H | -19890 / 0 | -95.2 | -95.2 | 0.36 (3) | 3.10 | |
| H- I | -19890 / 0 | -95.2 | -95.2 | 0.52 (3) | 3.03 | |
| I- J | -19890 / 0 | -95.2 | -95.2 | 0.52 (3) | 3.03 | |
| J- K | -14801 / 0 | -95.2 | -95.2 | 0.32 (3) | 3.59 | |
| K- L | -8036 / 71 | -95.2 | -95.2 | 0.13 (3) | 4.75 | |
| L- M | -5502 / 51 | -95.2 | -95.2 | 0.07 (3) | 4.97 | |
| AA- A | -7714 / 0 | 0.0 | 0.0 | 0.28 (2) | 5.40 | |
| O- M | -5837 / 63 | 0.0 | 0.0 | 0.22 (3) | 6.10 | |
| AB-AA | 0 / 0 | -134.7 | -134.7 | 0.03 (1) | 10.00 | |
| AA- Z | -126 / 134 | -39.5 | -39.5 | 0.04 (3) | 6.25 | |
| Z- Y | 0 / 4667 | -39.5 | -39.5 | 0.16 (2) | 10.00 | |
| Y- X | 0 / 10742 | -39.5 | -39.5 | 0.33 (2) | 10.00 | |
| X- W | 0 / 10742 | -39.5 | -39.5 | 0.33 (2) | 10.00 | |
| W- V | 0 / 18187 | -39.5 | -39.5 | 0.55 (2) | 10.00 | |
| V- U | 0 / 22063 | -39.5 | -39.5 | 0.67 (3) | 10.00 | |
| U- T | 0 / 22063 | -39.5 | -39.5 | 0.67 (3) | 10.00 | |
| T- S | 0 / 14801 | -39.5 | -39.5 | 0.44 (3) | 10.00 | |
| S- R | 0 / 8036 | -39.5 | -39.5 | 0.25 (3) | 10.00 | |
| R- Q | 0 / 8036 | -39.5 | -39.5 | 0.25 (3) | 10.00 | |
| Q- P | 0 / 3512 | -39.5 | -39.5 | 0.12 (3) | 10.00 | |
| P- O | -8 / 16 | -39.5 | -39.5 | 0.03 (2) | 10.00 | |
| O- N | 0 / 0 | -134.7 | -134.7 | 0.03 (1) | 10.00 | |

WEBS

| MEMB. | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| FR-TO | | |
| Z- B | -1752 / 0 | 0.30 (2) |
| B- Y | 0 / 9208 | 0.81 (3) |
| Y- C | -5277 / 0 | 0.90 (3) |
| C- W | 0 / 8869 | 0.78 (3) |
| W- D | -4482 / 0 | 0.77 (3) |
| D- V | 0 / 6704 | 0.59 (3) |
| V- F | -590 / 238 | 0.09 (10) |
| V- G | 0 / 2571 | 0.32 (1) |
| G- T | -3183 / 0 | 0.60 (2) |
| T- H | -661 / 220 | 0.11 (10) |
| T- J | 0 / 6070 | 0.54 (2) |
| S- J | -4099 / 0 | 0.70 (2) |
| S- K | 0 / 8060 | 0.71 (2) |
| Q- K | -4908 / 49 | 0.84 (2) |
| Q- L | 0 / 6862 | 0.61 (2) |
| P- L | -1320 / 15 | 0.23 (3) |
| A- Z | 0 / 5109 | 0.63 (2) |
| P- M | 0 / 3844 | 0.48 (3) |

FACTORED CONCENTRATED LOADS (LBS)

| JT | LOC. | LC1 | MAX- | MAX+ | FACE | DIR. | TYPE | HEEL | CONN. |
|---|---|---|---|---|---|---|---|---|---|
| V | 21-1-4 | -1602 | -1795 | --- | FRONT | VERT | DEAD | --- | C1 |
| V | 21-1-4 | -3057 | -3057 | --- | FRONT | VERT | SNOW | --- | C1 |
| Y | 6-9-7 | -504 | -564 | --- | FRONT | VERT | DEAD | --- | C1 |
| Y | 6-9-7 | -944 | -944 | --- | FRONT | VERT | SNOW | --- | C1 |

**CONNECTION REQUIREMENTS**

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

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN) AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**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 | = | 26.7 | PSF |
| | | DL | = | 6.0 | PSF |
| BOT | CH. | LL | = | 10.5 | PSF |
| | | DL | = | 7.4 | PSF |
| TOTAL | LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

*** NON STANDARD GIRDER ***
ADDT'L USER-DEFINED LOADS APPLIED TO ALL LOAD CASES.

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 944 (0.65")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 607 (1.01")

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=0.72/1.00 (D-F:2) , BC=0.67/1.00 (T-V:3) , WB=0.90/1.00 (C-Y:3) , SSI=0.15/1.00 (D-F:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |
| MII16 | 438 | 302 | 2547 | 1256 | 4283 | 1816 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.90 (M) (INPUT = 0.90 )
JSI METAL= 0.97 (X) (INPUT = 1.00 )

CONTINUED ON PAGE 2

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H07 | | 2 | TRUSS DESC. JT 45147 | E22052061(2) |



**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| F | TMW+w | MT20 | 2.0 | 4.0 | | |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TMW+w | MT20 | 2.0 | 4.0 | | |
| I | TS-t | MT20 | 5.0 | 8.0 | | |
| J | TMWW-t | MT20 | 5.0 | 6.0 | 2.25 | 2.00 |
| K | TMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.75 |
| L | TTWW-h | MT20 | 10.0 | 12.0 | 3.00 | 7.50 |
| M | TMVW-t | MT20 | 6.0 | 10.0 | 2.25 | 4.50 |
| O | BMV1+p | MT20 | 4.0 | 6.0 | | |
| P | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.00 |
| Q | BMWW-t | MT20 | 6.0 | 7.0 | 2.25 | 2.50 |
| R | BS-t | MT20 | 6.0 | 7.0 | | |
| S | BMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.75 |
| T | BMWWW-t | MT20 | 8.0 | 9.0 | 4.25 | 3.00 |
| U | BS-t | MII16 | 5.0 | 17.5 | | |
| V | BMWWW-t | MT20 | 8.0 | 9.0 | 4.25 | 3.50 |
| W | BMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.75 |
| X | BS-t | MT20 | 5.0 | 6.0 | | |
| Y | BMWW-t | MT20 | 6.0 | 7.0 | 2.25 | 2.50 |
| Z | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 2.00 |
| AA | BMV1+p | MT20 | 4.0 | 6.0 | | |

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

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H08 | | 1 | TRUSS DESC. JT 45147 | E22052062 |

Alpha Roof Truss, Maple

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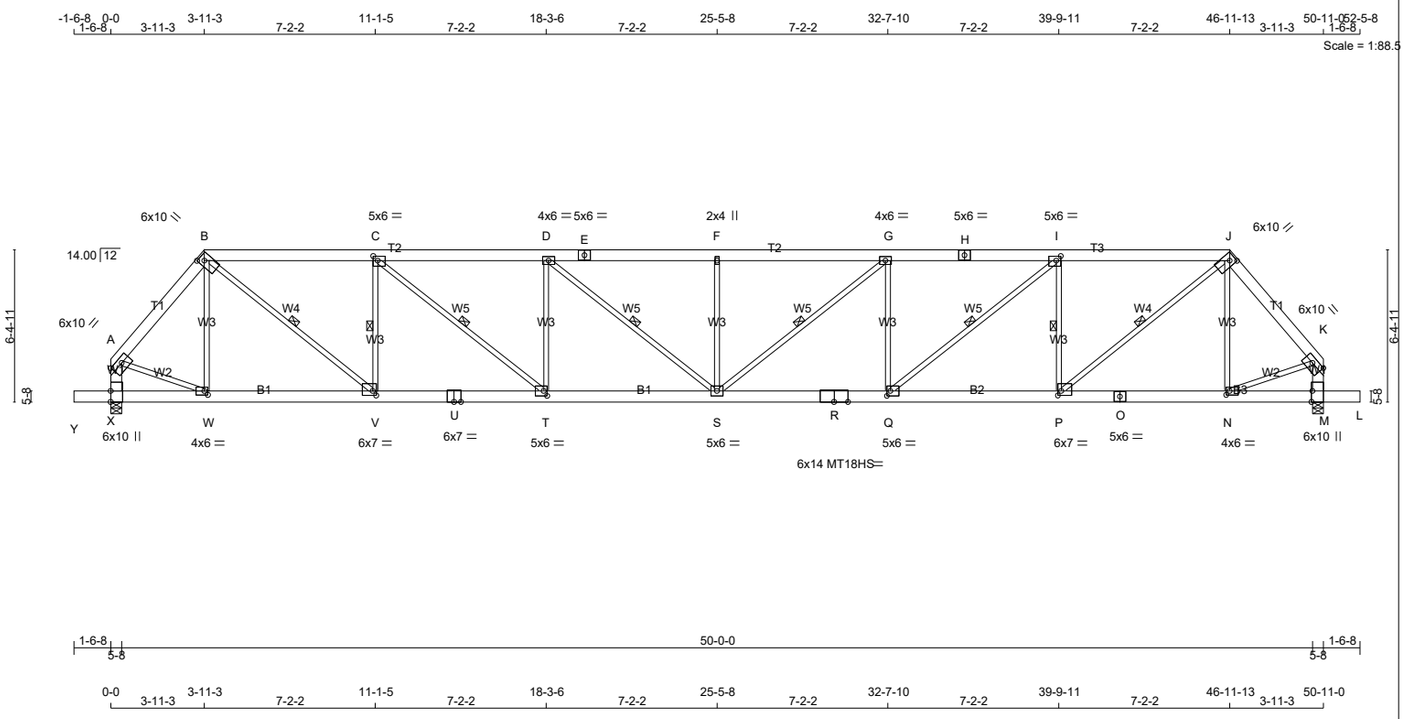




TOTAL WEIGHT = 282 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x6 | DRY | No.2 | SPF |
| B - E | 2x6 | DRY | No.2 | SPF |
| E - H | 2x6 | DRY | No.2 | SPF |
| H - J | 2x6 | DRY | No.2 | SPF |
| J - K | 2x6 | DRY | No.2 | SPF |
| X - A | 2x6 | DRY | No.2 | SPF |
| M - K | 2x6 | DRY | No.2 | SPF |
| Y - U | 2x6 | DRY | No.2 | SPF |
| U - R | 2x6 | DRY | No.2 | SPF |
| R - O | 2x6 | DRY | No.2 | SPF |
| O - L | 2x6 | DRY | No.2 | SPF |
| ALL WEBS EXCEPT | 2x3 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| B | TTWW+h | MT20 | 6.0 | 10.0 | 2.75 | 2.50 |
| C | TMWW-t | MT20 | 5.0 | 6.0 | 2.25 | 2.25 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TS-t | MT20 | 5.0 | 6.0 | | |
| F | TMW+w | MT20 | 2.0 | 4.0 | | |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TS-t | MT20 | 5.0 | 6.0 | | |
| I | TMWW-t | MT20 | 5.0 | 6.0 | 2.25 | 2.25 |
| J | TTWW+h | MT20 | 6.0 | 10.0 | 2.75 | 2.50 |
| K | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| M | BMV1+t | MT20 | 6.0 | 10.0 | Edge | 0.50 |
| N | BMWW-t | MT20 | 4.0 | 6.0 | 2.00 | 1.75 |
| O | BS-t | MT20 | 5.0 | 6.0 | | |
| P | BMWW-t | MT20 | 6.0 | 7.0 | 2.25 | 1.75 |
| Q | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 1.75 |
| R | BS-t | MT18HS | 6.0 | 14.0 | | |
| S | BMWWW-t | MT20 | 5.0 | 6.0 | | |
| T | BMWW-t | MT20 | 5.0 | 6.0 | 2.50 | 1.75 |
| U | BS-t | MT20 | 6.0 | 7.0 | | |
| V | BMWW-t | MT20 | 6.0 | 7.0 | 2.25 | 1.75 |
| W | BMWW-t | MT20 | 4.0 | 6.0 | 2.00 | 1.75 |
| X | BMV1+t | MT20 | 6.0 | 10.0 | Edge | |

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

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| X | 3637 | 0 | 3912 | -180 | -588 | 5-8 | 5-8 |
| M | 3637 | 0 | 3912 | 0 | -588 | 5-8 | 5-8 |

PROVIDE ANCHORAGE AT BEARING JOINT X FOR 588 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT M FOR 588 LBS FACTORED UPLIFT

PROVIDE FOR 180 LBS FACTORED HORIZONTAL REACTION AT JOINTX

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| X | 2734 | 1627 / 0 | 567 / 0 | 0 / 0 | 413 / -885 | 724 / 0 | 0 / 0 |
| M | 2734 | 1627 / 0 | 567 / 0 | 0 / 0 | 373 / -885 | 724 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | |
| X | --- | 0 / 0 | 0 / 0 | 0 / 0 | 128 / -128 | 0 / 0 | 0 /0 |

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

BEARING SIZE FACTOR = 1.15 AT JNT(S) X, M ( BASED ON SUPPORT DEPTH = 1-8 )

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 2.61 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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-V, C-V, C-T, D-S, G-S, I-Q, I-P, J-P.

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: (18)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -3633 / 579 | -95.2 | -95.2 | 0.20 (2) | 4.35 |
| B- C | -5584 / 984 | -95.2 | -95.2 | 0.64 (2) | 3.24 |
| C- D | -7471 / 1264 | -95.2 | -95.2 | 0.85 (2) | 2.66 |
| D- E | -8100 / 1352 | -95.2 | -95.2 | 0.83 (3) | 2.61 |
| E- F | -8100 / 1352 | -95.2 | -95.2 | 0.83 (3) | 2.61 |
| F- G | -8100 / 1352 | -95.2 | -95.2 | 0.83 (3) | 2.61 |
| G- H | -7471 / 1264 | -95.2 | -95.2 | 0.85 (3) | 2.66 |
| H- I | -7471 / 1264 | -95.2 | -95.2 | 0.85 (3) | 2.66 |
| I- J | -5584 / 985 | -95.2 | -95.2 | 0.64 (3) | 3.24 |
| J- K | -3633 / 580 | -95.2 | -95.2 | 0.20 (3) | 4.35 |
| X- A | -3671 / 589 | 0.0 | 0.0 | 0.25 (2) | 5.58 |
| M- K | -3671 / 589 | 0.0 | 0.0 | 0.25 (3) | 5.58 |
| Y- X | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |
| X- W | -163 / 172 | -39.5 | -39.5 | 0.14 (6) | 6.25 |
| W- V | -313 / 2339 | -39.5 | -39.5 | 0.40 (2) | 6.25 |
| V- U | -816 / 5585 | -39.5 | -39.5 | 0.76 (2) | 6.25 |
| U- T | -816 / 5585 | -39.5 | -39.5 | 0.76 (2) | 6.25 |
| T- S | -1094 / 7471 | -39.5 | -39.5 | 0.99 (2) | 6.25 |
| S- R | -1073 / 7471 | -39.5 | -39.5 | 0.99 (3) | 6.25 |
| R- Q | -1073 / 7471 | -39.5 | -39.5 | 0.99 (3) | 6.25 |
| Q- P | -775 / 5585 | -39.5 | -39.5 | 0.76 (3) | 6.25 |
| P- O | -251 / 2339 | -39.5 | -39.5 | 0.40 (3) | 6.25 |
| O- N | -251 / 2339 | -39.5 | -39.5 | 0.40 (3) | 6.25 |
| N- M | -8 / 16 | -39.5 | -39.5 | 0.14 (5) | 10.00 |
| M- L | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| W- B | -462 / 158 | 0.26 (9) |
| W- V | -677 / 4233 | 0.95 (3) |
| V- C | -2409 / 530 | 0.59 (3) |
| C- T | -387 / 2485 | 0.56 (3) |
| T- D | -1299 / 340 | 0.75 (3) |
| D- S | -142 / 856 | 0.19 (3) |
| S- F | -840 / 261 | 0.47 (10) |
| S- G | -142 / 856 | 0.19 (2) |
| Q- G | -1299 / 340 | 0.75 (2) |
| Q- I | -387 / 2485 | 0.56 (2) |
| P- I | -2409 / 530 | 0.59 (2) |
| P- J | -677 / 4233 | 0.95 (2) |
| N- J | -494 / 158 | 0.27 (10) |
| A- W | -282 / 2451 | 0.55 (2) |
| N- K | -282 / 2451 | 0.55 (3) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN) AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.51")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 855 (0.71")

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=0.85/1.00 (G-I:3) , BC=0.99/1.00 (Q-S:3) , WB=0.95/1.00 (J-P:2) , SSI=0.28/1.00 (B-C:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.90 (N) (INPUT = 0.90 )
JSI METAL= 0.89 (U) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H09 | | 1 | TRUSS DESC. JT 45147 | E22052063 |

Alpha Roof Truss, Maple

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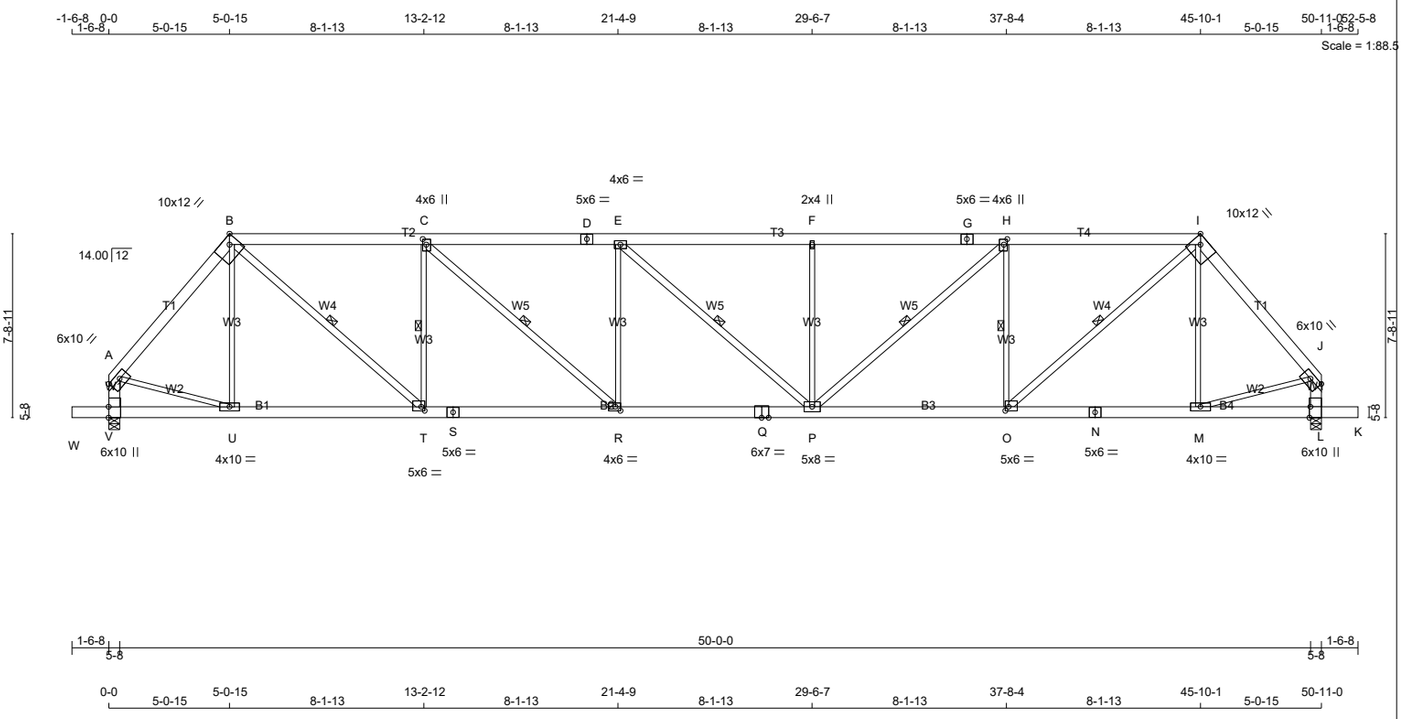


**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x6 | DRY | No.2 | SPF |
| B - D | 2x6 | DRY | No.2 | SPF |
| D - G | 2x6 | DRY | No.2 | SPF |
| G - I | 2x6 | DRY | No.2 | SPF |
| I - J | 2x6 | DRY | No.2 | SPF |
| V - A | 2x6 | DRY | No.2 | SPF |
| L - J | 2x6 | DRY | No.2 | SPF |
| W - S | 2x6 | DRY | No.2 | SPF |
| S - Q | 2x6 | DRY | No.2 | SPF |
| Q - N | 2x6 | DRY | No.2 | SPF |
| N - K | 2x6 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| B - T | 2x4 | DRY | No.2 | SPF |
| C - R | 2x4 | DRY | No.2 | SPF |
| E - P | 2x4 | DRY | No.2 | SPF |
| P - H | 2x4 | DRY | No.2 | SPF |
| O - I | 2x4 | 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 | 10.0 | Edge | 5.50 |
| B | TTWW-h | MT20 | 10.0 | 12.0 | Edge | 4.25 |
| C | TMWW+t | MT20 | 4.0 | 6.0 | 2.75 | 1.75 |
| D | TS-t | MT20 | 5.0 | 6.0 | | |
| E | TMWW-t | MT20 | 4.0 | 6.0 | | |
| F | TMW+w | MT20 | 2.0 | 4.0 | | |
| G | TS-t | MT20 | 5.0 | 6.0 | | |
| H | TMWW+t | MT20 | 4.0 | 6.0 | 2.75 | 1.75 |
| I | TTWW-h | MT20 | 10.0 | 12.0 | Edge | 4.25 |
| J | TMVW-t | MT20 | 6.0 | 10.0 | Edge | 5.50 |
| L | BMV1+t | MT20 | 6.0 | 10.0 | Edge | 0.50 |
| M | BMWW-t | MT20 | 4.0 | 10.0 | | |
| N | BS-t | MT20 | 5.0 | 6.0 | | |
| O | BMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 1.75 |
| P | BMWWW-t | MT20 | 5.0 | 8.0 | | |
| Q | BS-t | MT20 | 6.0 | 7.0 | | |
| R | BMWW-t | MT20 | 4.0 | 6.0 | 2.00 | 2.50 |
| S | BS-t | MT20 | 5.0 | 6.0 | | |
| T | BMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 1.75 |
| U | BMWW-t | MT20 | 4.0 | 10.0 | | |
| V | BMV1+t | MT20 | 6.0 | 10.0 | Edge | |

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

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| V | 3637 | 0 | 3889 | -217 | -583 | 5-8 | 5-8 |
| L | 3637 | 0 | 3889 | 0 | -583 | 5-8 | 5-8 |

PROVIDE ANCHORAGE AT BEARING JOINT V FOR 583 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT L FOR 583 LBS FACTORED UPLIFT

PROVIDE FOR 217 LBS FACTORED HORIZONTAL REACTION AT JOINTV

**UNFACTORED REACTIONS**

| | 1ST LCASE | MAX./MIN. COMPONENT REACTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| JT | COMBINED | SNOW | LIVE | HORZ | PERM.LIVE | WIND | DEAD | SOIL |
| V | 2734 | 1612 / 0 | 567 / 0 | | 0 / 0 | 408 / -882 | 724 / 0 | 0 / 0 |
| L | 2734 | 1612 / 0 | 567 / 0 | | 0 / 0 | 357 / -882 | 724 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | | |
| V | --- | 0 / 0 | 0 / 0 | | 0 / 0 | 155 / -155 | 0 / 0 | 0 /0 |

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

BEARING SIZE FACTOR = 1.15 AT JNT(S) V, L ( BASED ON SUPPORT DEPTH = 1-8 )

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 2.73 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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-T, C-T, C-R, E-P, H-P, H-O, I-O.

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: (18)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -3686 / 584 | -95.2 | -95.2 | 0.32 (2) | 4.23 |
| B- C | -5142 / 943 | -95.2 | -95.2 | 0.78 (2) | 3.19 |
| C- D | -6447 / 1130 | -95.2 | -95.2 | 0.93 (2) | 2.73 |
| D- E | -6447 / 1130 | -95.2 | -95.2 | 0.93 (2) | 2.73 |
| E- F | -6443 / 1128 | -95.2 | -95.2 | 0.79 (3) | 2.95 |
| F- G | -6443 / 1128 | -95.2 | -95.2 | 0.94 (3) | 2.73 |
| G- H | -6443 / 1128 | -95.2 | -95.2 | 0.94 (3) | 2.73 |
| H- I | -5143 / 944 | -95.2 | -95.2 | 0.78 (3) | 3.19 |
| I- J | -3686 / 584 | -95.2 | -95.2 | 0.32 (3) | 4.23 |
| V- A | -3615 / 589 | 0.0 | 0.0 | 0.24 (2) | 5.62 |
| L- J | -3615 / 589 | 0.0 | 0.0 | 0.24 (3) | 5.62 |
| W- V | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |
| V- U | -201 / 210 | -39.5 | -39.5 | 0.16 (17) | 6.25 |
| U- T | -310 / 2381 | -39.5 | -39.5 | 0.41 (5) | 6.25 |
| T- S | -737 / 5142 | -39.5 | -39.5 | 0.73 (2) | 6.25 |
| S- R | -737 / 5142 | -39.5 | -39.5 | 0.73 (2) | 6.25 |
| R- Q | -922 / 6447 | -39.5 | -39.5 | 0.87 (2) | 6.25 |
| Q- P | -922 / 6447 | -39.5 | -39.5 | 0.87 (2) | 6.25 |
| P- O | -692 / 5143 | -39.5 | -39.5 | 0.74 (3) | 6.25 |
| O- N | -234 / 2381 | -39.5 | -39.5 | 0.42 (6) | 6.25 |
| N- M | -234 / 2381 | -39.5 | -39.5 | 0.42 (6) | 6.25 |
| M- L | -8 / 16 | -39.5 | -39.5 | 0.16 (17) | 10.00 |
| L- K | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| U- B | -336 / 155 | 0.32 (9) |
| B- T | -610 / 3746 | 0.60 (3) |
| T- C | -2158 / 516 | 0.74 (3) |
| C- R | -288 / 1809 | 0.29 (3) |
| R- E | -933 / 299 | 0.89 (10) |
| E- P | -36 / 34 | 0.02 (2) |
| P- F | -916 / 285 | 0.88 (10) |
| P- H | -285 / 1802 | 0.29 (2) |
| O- H | -2156 / 515 | 0.74 (2) |
| O- I | -611 / 3748 | 0.60 (2) |
| M- I | -362 / 155 | 0.35 (10) |
| A- U | -260 / 2450 | 0.55 (2) |
| M- J | -260 / 2450 | 0.55 (3) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN} AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

[M]

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.35")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.50")

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=0.94/1.00 (F-H:3) , BC=0.87/1.00 (P-R:2) , WB=0.89/1.00 (E-R:10) , SSI=0.32/1.00 (H-I:2)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (O) (INPUT = 0.90 )
JSI METAL= 0.97 (Q) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H10 | | 1 | TRUSS DESC. JT 45147 | E22052064 |

Alpha Roof Truss, Maple

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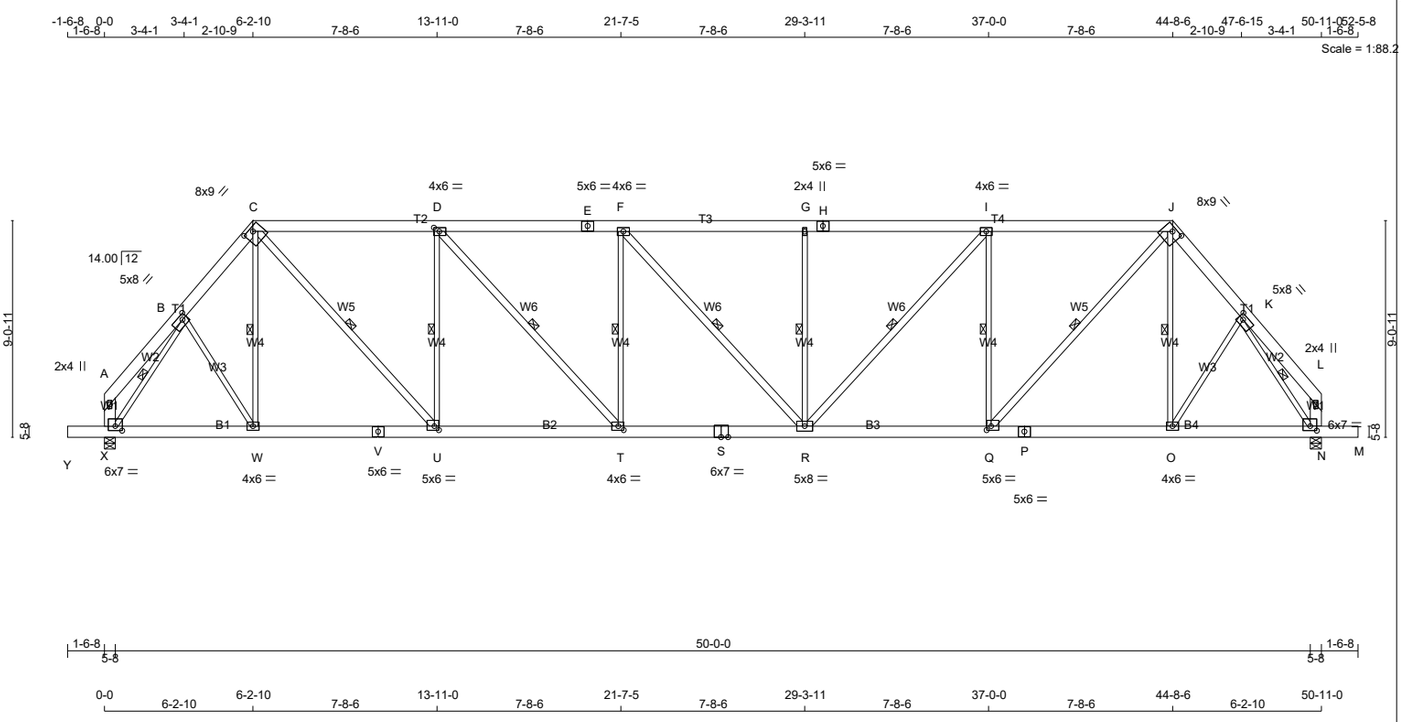





TOTAL WEIGHT = 326 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x6 | DRY | No.2 | SPF |
| C - E | 2x6 | DRY | No.2 | SPF |
| E - H | 2x6 | DRY | No.2 | SPF |
| H - J | 2x6 | DRY | No.2 | SPF |
| J - L | 2x6 | DRY | No.2 | SPF |
| X - A | 2x6 | DRY | No.2 | SPF |
| N - L | 2x6 | DRY | No.2 | SPF |
| Y - V | 2x6 | DRY | No.2 | SPF |
| V - S | 2x6 | DRY | No.2 | SPF |
| S - P | 2x6 | DRY | No.2 | SPF |
| P - M | 2x6 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| C - U | 2x4 | DRY | No.2 | SPF |
| D - T | 2x4 | DRY | No.2 | SPF |
| F - R | 2x4 | DRY | No.2 | SPF |
| R - I | 2x4 | DRY | No.2 | SPF |
| Q - J | 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 | | |
| B | TMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.50 |
| C | TTWW-h | MT20 | 8.0 | 9.0 | 2.00 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | 2.00 | 2.75 |
| E | TS-t | MT20 | 5.0 | 6.0 | | |
| F | TMWW-t | MT20 | 4.0 | 6.0 | | |
| G | TMW+w | MT20 | 2.0 | 4.0 | | |
| H | TS-t | MT20 | 5.0 | 6.0 | | |
| I | TMWW-t | MT20 | 4.0 | 6.0 | | |
| J | TTWW-h | MT20 | 8.0 | 9.0 | 2.00 | 4.50 |
| K | TMWW-t | MT20 | 5.0 | 8.0 | 2.25 | 2.50 |
| L | TMV+p | MT20 | 2.0 | 4.0 | | |
| N | BMVW1-t | MT20 | 6.0 | 7.0 | 2.25 | 3.25 |
| O | BMWW-t | MT20 | 4.0 | 6.0 | | |
| P | BS-t | MT20 | 5.0 | 6.0 | | |
| Q | BMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 2.25 |
| R | BMWWW-t | MT20 | 5.0 | 8.0 | | |
| S | BS-t | MT20 | 6.0 | 7.0 | | |
| T | BMWW-t | MT20 | 4.0 | 6.0 | 2.00 | 2.75 |
| U | BMWW-t | MT20 | 5.0 | 6.0 | 2.00 | 2.25 |
| V | BS-t | MT20 | 5.0 | 6.0 | | |
| W | BMWW-t | MT20 | 4.0 | 6.0 | | |
| X | BMVW1-t | MT20 | 6.0 | 7.0 | 2.25 | 3.50 |

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| X | 3637 | 0 | 3863 | -255 | -577 | 5-8 | 5-4 |
| N | 3637 | 0 | 3863 | 0 | -577 | 5-8 | 5-4 |

PROVIDE ANCHORAGE AT BEARING JOINT X FOR 577 LBS FACTORED UPLIFT

PROVIDE ANCHORAGE AT BEARING JOINT N FOR 577 LBS FACTORED UPLIFT

PROVIDE FOR 255 LBS FACTORED HORIZONTAL REACTION AT JOINTX

**UNFACTORED REACTIONS**

| | 1ST LCASE | MAX./MIN. COMPONENT REACTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| JT | COMBINED | SNOW | LIVE | HORZ | PERM.LIVE | WIND | DEAD | SOIL |
| X | 2734 | 1595 / 0 | 567 / 0 | | 0 / 0 | 403 / -877 | 724 / 0 | 0 / 0 |
| N | 2734 | 1595 / 0 | 567 / 0 | | 0 / 0 | 342 / -877 | 724 / 0 | 0 / 0 |
| HORIZONTAL REACTIONS | | | | | | | | |
| X | --- | 0 / 0 | 0 / 0 | | 0 / 0 | 182 / -182 | 0 / 0 | 0 /0 |

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

**BRACING**

MAX. UNBRACED TOP CHORD LENGTH = 3.17 FT.

MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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 C-W, C-U, D-U, D-T, F-T, F-R, G-R, I-R, I-Q, J-Q, J-O, B-X, K-N.

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: (18)

C H O R D S

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -47 / 133 | -95.2 | -95.2 | 0.08 (2) | 6.25 |
| B- C | -3687 / 735 | -95.2 | -95.2 | 0.15 (2) | 4.37 |
| C- D | -4447 / 864 | -95.2 | -95.2 | 0.63 (2) | 3.56 |
| D- E | -5420 / 998 | -95.2 | -95.2 | 0.72 (2) | 3.18 |
| E- F | -5420 / 998 | -95.2 | -95.2 | 0.72 (2) | 3.18 |
| F- G | -5415 / 996 | -95.2 | -95.2 | 0.61 (3) | 3.34 |
| G- H | -5415 / 996 | -95.2 | -95.2 | 0.73 (3) | 3.17 |
| H- I | -5415 / 996 | -95.2 | -95.2 | 0.73 (3) | 3.17 |
| I- J | -4448 / 865 | -95.2 | -95.2 | 0.64 (3) | 3.55 |
| J- K | -3687 / 735 | -95.2 | -95.2 | 0.15 (3) | 4.37 |
| K- L | -46 / 133 | -95.2 | -95.2 | 0.08 (3) | 6.25 |
| X- A | -177 / 144 | 0.0 | 0.0 | 0.02 (13) | 7.81 |
| N- L | -176 / 144 | 0.0 | 0.0 | 0.02 (14) | 7.81 |
| Y- X | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |
| X- W | -401 / 2184 | -39.5 | -39.5 | 0.37 (2) | 6.25 |
| W- V | -301 / 2380 | -39.5 | -39.5 | 0.40 (2) | 6.25 |
| V- U | -301 / 2380 | -39.5 | -39.5 | 0.40 (2) | 6.25 |
| U- T | -619 / 4447 | -39.5 | -39.5 | 0.64 (2) | 6.25 |
| T- S | -751 / 5420 | -39.5 | -39.5 | 0.74 (2) | 6.25 |
| S- R | -751 / 5420 | -39.5 | -39.5 | 0.74 (2) | 6.25 |
| R- Q | -567 / 4448 | -39.5 | -39.5 | 0.65 (3) | 6.25 |
| Q- P | -214 / 2379 | -39.5 | -39.5 | 0.40 (3) | 6.25 |
| P- O | -214 / 2379 | -39.5 | -39.5 | 0.40 (3) | 6.25 |
| O- N | -270 / 2183 | -39.5 | -39.5 | 0.37 (3) | 6.25 |
| N- M | 0 / 0 | -134.7 | -134.7 | 0.11 (1) | 10.00 |

W E B S

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| W- C | -188 / 210 | 0.09 (10) |
| C- U | -527 / 3169 | 0.51 (3) |
| U- D | -2049 / 493 | 1.00 (3) |
| D- T | -251 / 1540 | 0.25 (3) |
| T- F | -889 / 289 | 0.42 (10) |
| F- R | -47 / 43 | 0.03 (2) |
| R- G | -864 / 268 | 0.41 (10) |
| R- I | -248 / 1532 | 0.25 (2) |
| Q- I | -2047 / 492 | 1.00 (2) |
| Q- J | -527 / 3171 | 0.51 (2) |
| O- J | -167 / 231 | 0.08 (9) |
| X- B | -4043 / 530 | 0.95 (2) |
| B- W | 0 / 502 | 0.11 (3) |
| O- K | -29 / 502 | 0.11 (2) |
| K- N | -4043 / 530 | 0.95 (3) |

TRUSS HAS BEEN CHECKED FOR UNBALANCED LOADING AS PER NBCC 4.1.6.2.(8)

WIND LOAD APPLIED IS DERIVED FROM REFERENCE VELOCITY PRESSURE OF { 9.2} PSF AT {30-0-0} FT-IN-SX REFERENCE HEIGHT ABOVE GRADE AND USING EXTERNAL PEAK COEFFICIENTS, CpCg, BASED ON THE {MAIN WIND FORCE RESISTING SYSTEM}.INTERNAL WIND PRESSURE IS BASED ON DESIGN {CATEGORY 2}. BUILDING MAY BE LOCATED ON {ROUGH TERRAIN) AT MINIMUM {1.000} MILES DISTANCE FROM OPEN TERRAIN., AND TRUSS IS DESIGNED TO BE LOCATED AT LEAST {0-0} FT-IN-SX AWAY FROM EAVE.TRUSS UPLIFT IS BASED ON TOP AND BOTTOM CHORD DEAD LOADS OF 6.0 PSF AND 7.4 PSF RESPECTIVELY.

**DESIGN CRITERIA**

SPECIFIED LOADS:

| | | | | |
|---|---|---|---|---|
| TOP CH. | LL | = | 26.7 | PSF |
| | DL | = | 6.0 | PSF |
| BOT CH. | LL | = | 10.5 | PSF |
| | DL | = | 7.4 | PSF |
| TOTAL LOAD | | = | 50.6 | PSF |

**SPACING = 24.0 IN. C/C**

LOADING IN FLAT SECTION BASED ON A SLOPE OF 7.00/12

THIS TRUSS IS DESIGNED FOR COMMERCIAL OR INDUSTRIAL BUILDING REQUIREMENTS OF PART 4, NBCC 2015

THIS DESIGN COMPLIES WITH:
- PART 4 OF BCBC 2018 , ABC 2019
- PART 4 OF OBC 2012 (2019 AMENDMENT)
- CSA 086-14
- TPIC 2014

DESIGN ASSUMPTIONS
- SLOPE REDUCTION FACTOR USED
- PERCENTAGE OF GROUND SNOW LOAD IS USER-DEFINED.

(80 % OF 23.0 P.S.F. G.S.L. PLUS 8.4 P.S.F. RAIN LOAD) TIMES IMPORTANCE FACTOR EQUALS 26.7 P.S.F. SPECIFIED ROOF LIVE LOAD

ALLOWABLE DEFL.(LL)= L/360 (1.70")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.29")
ALLOWABLE DEFL.(TL)= L/180 (3.39")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.41")

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=0.73/1.00 (G-I:3) , BC=0.74/1.00 (R-T:2) , WB=1.00/1.00 (D-U:3) , SSI=0.30/1.00 (I-J:3)

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

SNOW LOAD IMPORTANCE FACTOR = 1.00
WIND LOAD IMPORTANCE FACTOR = 1.00
LIVE LOAD IMPORTANCE FACTOR = 1.00
COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE HEELS OFF

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (N) (INPUT = 0.90 )
JSI METAL= 0.86 (S) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H11 | | 1 | TRUSS DESC. JT 45147 | E22052065 |

Alpha Roof Truss, Maple

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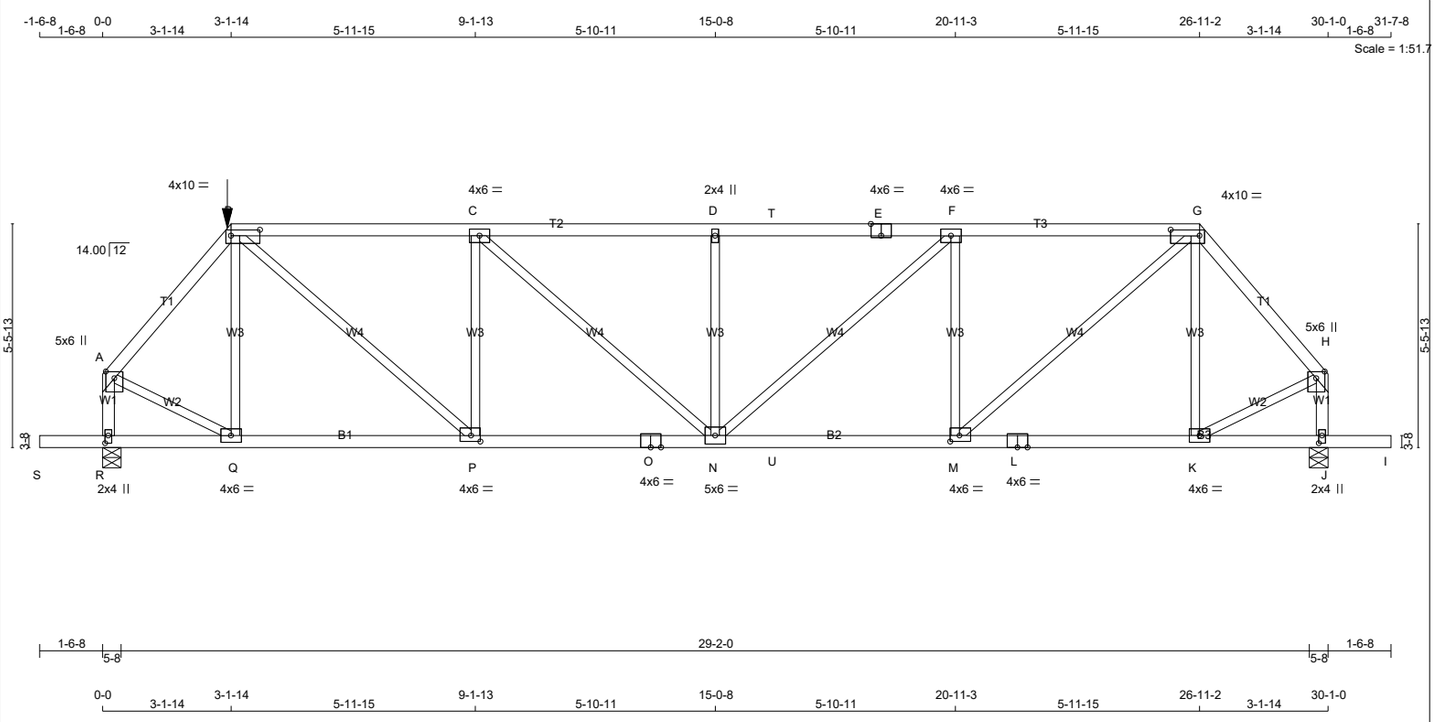





TOTAL WEIGHT = 130 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x4 | DRY | No.2 | SPF |
| B - E | 2x4 | DRY | 1650F 1.5E | SPF |
| E - G | 2x4 | DRY | 1650F 1.5E | SPF |
| G - H | 2x4 | DRY | No.2 | SPF |
| R - A | 2x4 | DRY | No.2 | SPF |
| J - H | 2x4 | DRY | No.2 | SPF |
| S - O | 2x4 | DRY | No.2 | SPF |
| O - L | 2x4 | DRY | No.2 | SPF |
| L - I | 2x4 | DRY | No.2 | SPF |
| ALL WEBS EXCEPT | 2x3 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW+p | MT20 | 5.0 | 6.0 | 2.00 | 2.50 |
| B | TTWW-l | MT20 | 4.0 | 10.0 | 1.75 | 8.50 |
| C | TMWW-t | MT20 | 4.0 | 6.0 | | |
| D | TMW+w | MT20 | 2.0 | 4.0 | | |
| E | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| F | TMWW-t | MT20 | 4.0 | 6.0 | | |
| G | TTWW-l | MT20 | 4.0 | 10.0 | 1.75 | 8.50 |
| H | TMVW+p | MT20 | 5.0 | 6.0 | 2.00 | 2.50 |
| J | BMV1+p | MT20 | 2.0 | 4.0 | 2.25 | 1.00 |
| K | BMWW-t | MT20 | 4.0 | 6.0 | | |
| L | BS-t | MT20 | 4.0 | 6.0 | | |
| M | BMWW-t | MT20 | 4.0 | 6.0 | 1.75 | 2.75 |
| N | BMWWW-t | MT20 | 5.0 | 6.0 | | |
| O | BS-t | MT20 | 4.0 | 6.0 | | |
| P | BMWW-t | MT20 | 4.0 | 6.0 | 1.75 | 2.75 |
| Q | BMWW-t | MT20 | 4.0 | 6.0 | | |
| R | BMV1+p | MT20 | 2.0 | 4.0 | 2.25 | 1.00 |

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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| R | 2119 | 0 | 2119 | 0 | 0 | 5-8 | 3-4 |
| J | 1809 | 0 | 1809 | 0 | 0 | 5-8 | 2-4 |

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| R | 1511 | 920 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 591 / 0 | 0 / 0 |
| J | 1289 | 787 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 502 / 0 | 0 / 0 |

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

**BRACING**

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 3.87 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

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

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | -1742 / 0 | -78.0 | -78.0 | 0.21 (1) | | 4.83 |
| B- C | -2482 / 0 | -114.5 | -114.5 | 0.68 (1) | | 4.06 |
| C- D | -2753 / 0 | -114.5 | -114.5 | 0.70 (1) | | 3.87 |
| D- T | -2753 / 0 | -114.5 | -114.5 | 0.48 (1) | | 4.22 |
| T- E | -2753 / 0 | -78.0 | -78.0 | 0.48 (1) | | 4.22 |
| E- F | -2753 / 0 | -78.0 | -78.0 | 0.48 (1) | | 4.22 |
| F- G | -2210 / 0 | -78.0 | -78.0 | 0.44 (1) | | 4.64 |
| G- H | -1453 / 0 | -78.0 | -78.0 | 0.19 (1) | | 5.21 |
| R- A | -1946 / 0 | 0.0 | 0.0 | 0.23 (1) | | 5.98 |
| J- H | -1644 / 0 | 0.0 | 0.0 | 0.20 (1) | | 6.42 |
| S- R | 0 / 0 | -96.5 | -96.5 | 0.17 (1) | | 10.00 |
| R- Q | 0 / 0 | -27.2 | -27.2 | 0.16 (4) | | 10.00 |
| Q- P | 0 / 1120 | -27.2 | -27.2 | 0.33 (4) | | 10.00 |
| P- O | 0 / 2482 | -27.2 | -27.2 | 0.55 (1) | | 10.00 |
| O- N | 0 / 2482 | -27.2 | -27.2 | 0.55 (1) | | 10.00 |
| N- U | 0 / 2210 | -27.2 | -27.2 | 0.47 (1) | | 10.00 |
| U- M | 0 / 2210 | -18.5 | -18.5 | 0.47 (1) | | 10.00 |
| M- L | 0 / 934 | -18.5 | -18.5 | 0.24 (1) | | 10.00 |
| L- K | 0 / 934 | -18.5 | -18.5 | 0.24 (1) | | 10.00 |
| K- J | 0 / 0 | -18.5 | -18.5 | 0.11 (4) | | 10.00 |
| J- I | 0 / 0 | -96.5 | -96.5 | 0.17 (1) | | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| Q- B | -351 / 0 | 0.16 (1) |
| P- C | -1007 / 0 | 0.47 (1) |
| P- C | 0 / 1797 | 0.44 (1) |
| C- N | 0 / 361 | 0.09 (1) |
| N- D | -573 / 0 | 0.27 (1) |
| N- F | 0 / 724 | 0.18 (1) |
| M- F | -988 / 0 | 0.46 (1) |
| M- G | 0 / 1683 | 0.42 (1) |
| K- G | -313 / 0 | 0.15 (1) |
| A- Q | 0 / 1231 | 0.30 (1) |
| K- H | 0 / 1027 | 0.25 (1) |

FACTORED CONCENTRATED LOADS (LBS)

| JT | LOC. | LC1 | MAX- | MAX+ | FACE | DIR. | TYPE | HEEL | CONN. |
|---|---|---|---|---|---|---|---|---|---|
| B | 3-1-14 | -97 | -97 | --- | FRONT | VERT | TOTAL | --- | C1 |

**CONNECTION REQUIREMENTS**

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

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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

GIRDER TYPE: CPrimeHip
SIDE SETBACK = 3-1-14
END SETBACK = 3-10-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDT'L LOADS BASED ON 55 % OF GSL.
LOADS APPLIED TO FIRST 16-6-0 OF SPAN MEASURED FROM THE LEFT.

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 (1.00")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.11")
ALLOWABLE DEFL.(TL)= L/360 (1.00")
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=0.70/1.00 (C-D:1) , BC=0.55/1.00 (N-P:1) , WB=0.47/1.00 (C-P:1) , SSI=0.36/1.00 (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

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (P) (INPUT = 0.90 )
JSI METAL= 0.58 (O) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H12T | | 1 | TRUSS DESC. JT 45147 | E22052066 |

Alpa Roof Truss, Maple

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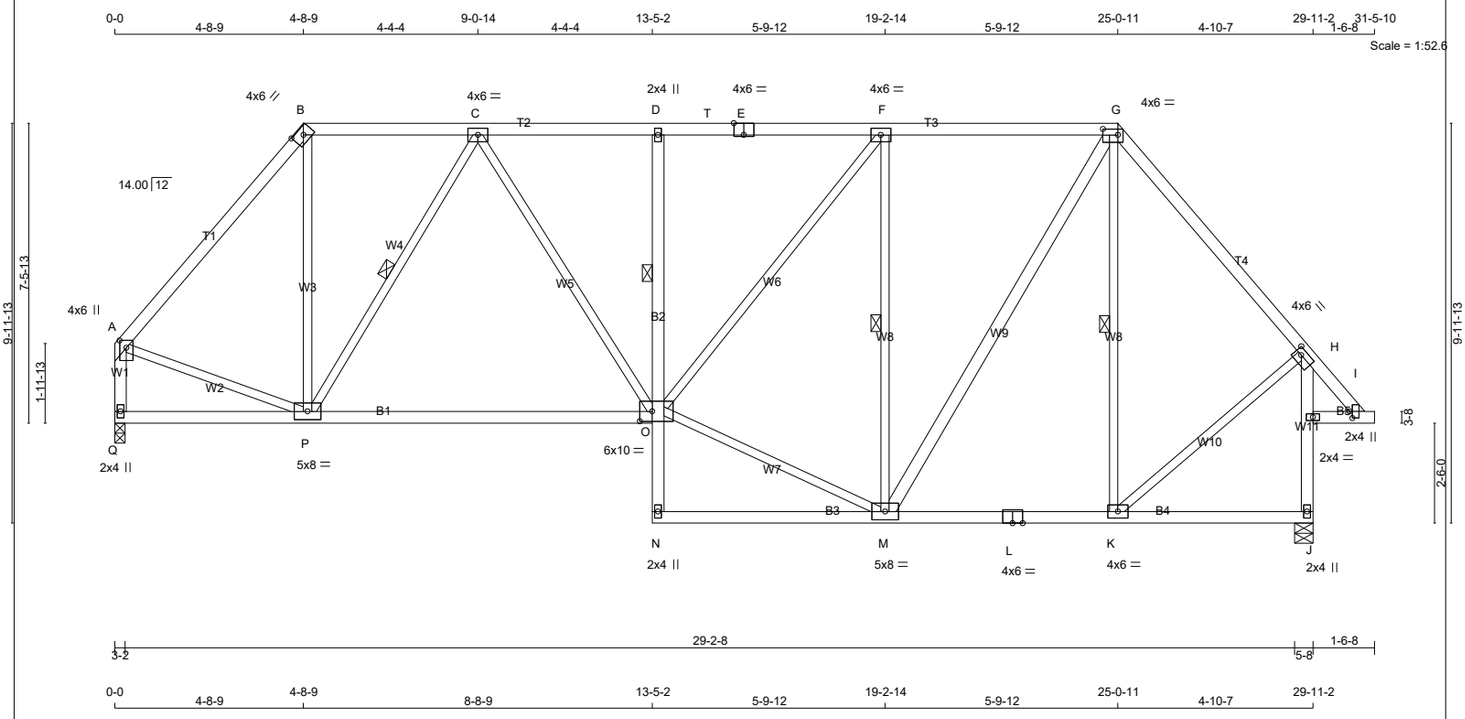


TOTAL WEIGHT = 163 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x4 | DRY | No.2 | SPF |
| B - E | 2x4 | DRY | No.2 | SPF |
| E - G | 2x4 | DRY | No.2 | SPF |
| G - I | 2x4 | DRY | No.2 | SPF |
| Q - A | 2x4 | DRY | No.2 | SPF |
| J - H | 2x4 | DRY | No.2 | SPF |
| Q - O | 2x4 | DRY | No.2 | SPF |
| N - D | 2x4 | DRY | No.2 | SPF |
| N - L | 2x4 | DRY | No.2 | SPF |
| L - J | 2x4 | DRY | No.2 | SPF |
| ALL WEBS EXCEPT | 2x3 | DRY | No.2 | SPF |
| M - G | 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 | 2.25 | 2.00 |
| B | TTW-h | MT20 | 4.0 | 6.0 | 2.00 | 3.00 |
| C | TMWW-t | MT20 | 4.0 | 6.0 | | |
| D | TMV+p | MT20 | 2.0 | 4.0 | | |
| E | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| F | TMWW-t | MT20 | 4.0 | 6.0 | | |
| G | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| H | TMVW-t | MT20 | 4.0 | 6.0 | 1.75 | 2.00 |
| I | NP+p | MT20 | 2.0 | 4.0 | 2.00 | 1.00 |
| J | BMV1+p | MT20 | 2.0 | 4.0 | | |
| K | BMWW-t | MT20 | 4.0 | 6.0 | | |
| L | BS-t | MT20 | 4.0 | 6.0 | | |
| M | BMWWW-t | MT20 | 5.0 | 8.0 | | |
| N | BMV+p | MT20 | 2.0 | 4.0 | | |
| O | BVMWWW-l | MT20 | 6.0 | 10.0 | 3.00 | 3.75 |
| P | BMWWW-t | MT20 | 5.0 | 8.0 | | |
| Q | BMV1+p | MT20 | 2.0 | 4.0 | | |
| R | NP-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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| Q | 1597 | 0 | 1597 | 0 | 0 | 3-2 | 1-12 |
| J | 1688 | 0 | 1688 | 0 | 0 | 5-8 | 2-0 |

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | SNOW | MAX./MIN. COMPONENT REACTIONS LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| Q | 1152 | 628 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 524 / 0 | 0 / 0 |
| J | 1215 | 678 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 537 / 0 | 0 / 0 |

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

**BRACING**

FOR SECTION B-G, MAX. PURLIN SPACING = 2.00 FT.
FOR OTHER SECTIONS, TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 5.05 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 6.25 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-O, C-P, F-M, G-K.

END VERTICAL(S) MUST BE SHEATHED OR HAVE BRACES AS INDICATED IN THE MAX. UNBRACED LENGTH COLUMN OF THE TABLE BELOW

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -1425 / 0 | -78.0 | -78.0 | 0.39 (1) | 5.05 |
| B- C | -934 / 0 | -93.0 | -93.0 | 0.26 (1) | 2.00 |
| C- D | -1719 / 0 | -93.0 | -93.0 | 0.30 (1) | 2.00 |
| D- T | -1716 / 0 | -93.0 | -93.0 | 0.55 (1) | 2.00 |
| T- E | -1716 / 0 | -93.0 | -93.0 | 0.55 (1) | 2.00 |
| E- F | -1716 / 0 | -93.0 | -93.0 | 0.55 (1) | 2.00 |
| F- G | -1204 / 0 | -93.0 | -93.0 | 0.51 (1) | 2.00 |
| G- H | -1075 / 0 | -78.0 | -78.0 | 0.39 (1) | 5.62 |
| H- I | 0 / 35 | -78.0 | -78.0 | 0.08 (1) | 10.00 |
| Q- A | -1579 / 0 | 0.0 | 0.0 | 0.18 (1) | 6.56 |
| J- H | -1652 / 0 | 0.0 | 0.0 | 0.53 (1) | 6.45 |
| Q- P | 0 / 0 | -18.5 | -18.5 | 0.31 (4) | 10.00 |
| P- O | 0 / 1451 | -18.5 | -18.5 | 0.47 (4) | 10.00 |
| N- O | 0 / 47 | 0.0 | 0.0 | 0.04 (1) | 10.00 |
| O- D | -441 / 0 | 0.0 | 0.0 | 0.05 (1) | 6.25 |
| N- M | 0 / 10 | -18.5 | -18.5 | 0.14 (4) | 10.00 |
| M- L | 0 / 692 | -18.5 | -18.5 | 0.23 (4) | 10.00 |
| L- K | 0 / 692 | -18.5 | -18.5 | 0.23 (4) | 10.00 |
| K- J | 0 / 0 | -18.5 | -18.5 | 0.12 (4) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| P- B | 0 / 731 | 0.16 (1) |
| P- C | -1015 / 0 | 0.48 (1) |
| C- O | 0 / 505 | 0.11 (1) |
| O- M | 0 / 1305 | 0.29 (1) |
| O- F | 0 / 825 | 0.19 (1) |
| M- F | -1260 / 0 | 0.85 (1) |
| M- G | 0 / 993 | 0.16 (1) |
| K- G | -443 / 0 | 0.30 (1) |
| A- P | 0 / 974 | 0.22 (1) |
| K- H | 0 / 888 | 0.20 (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/C**

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

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 (1.00")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.07")
ALLOWABLE DEFL.(TL)= L/360 (1.00")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.26")

CSI: TC=0.55/1.00 (D-F:1) , BC=0.47/1.00 (O-P:4) , WB=0.85/1.00 (F-M:1) , SSI=0.26/1.00 (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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (A) (INPUT = 0.90 )
JSI METAL= 0.52 (A) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H13S | | 1 | TRUSS DESC. JT 45147 | E22052067 |

Alpha Roof Truss, Maple

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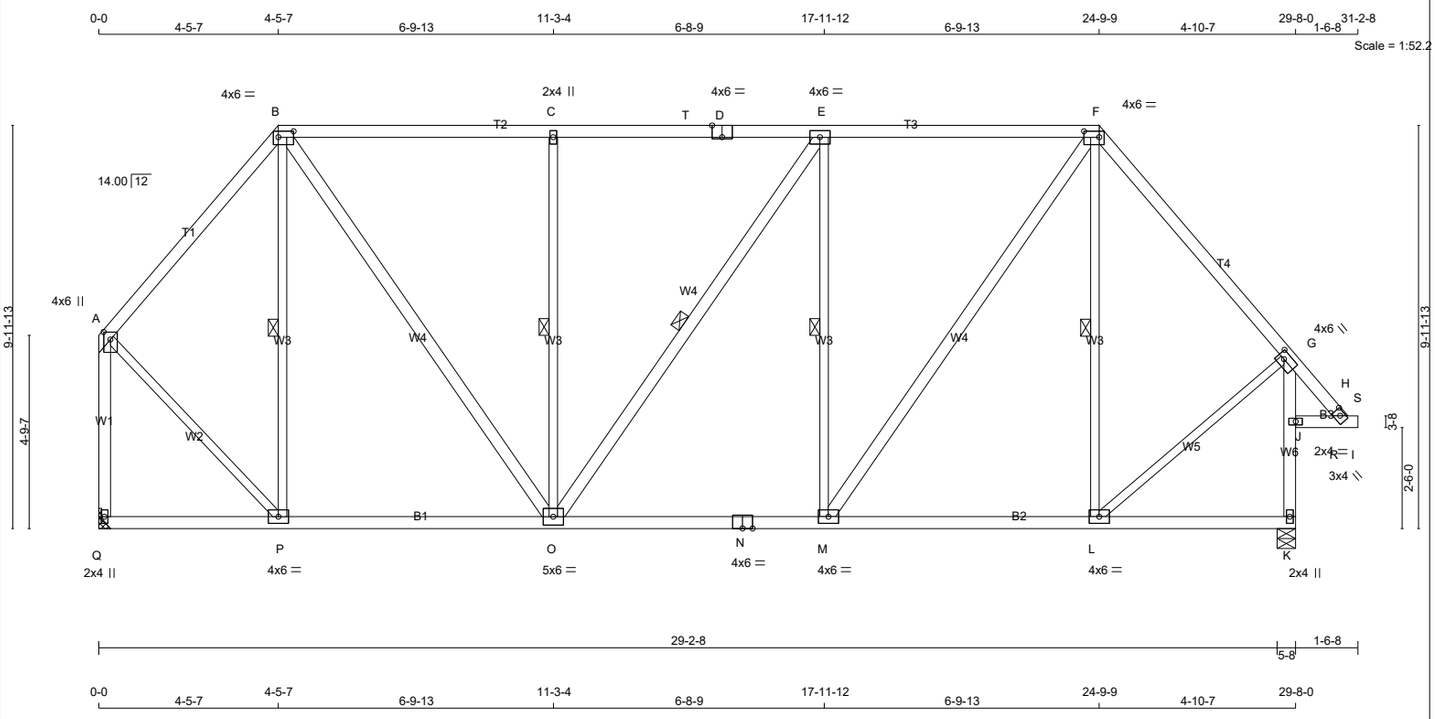


TOTAL WEIGHT = 3 X 167 = 500 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x4 | DRY | No.2 | SPF |
| B - D | 2x4 | DRY | No.2 | SPF |
| D - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| Q - A | 2x4 | DRY | No.2 | SPF |
| Q - N | 2x4 | DRY | No.2 | SPF |
| N - K | 2x4 | DRY | No.2 | SPF |
| J - I | 2x4 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| B - O | 2x4 | DRY | No.2 | SPF |
| O - E | 2x4 | DRY | No.2 | SPF |
| M - F | 2x4 | DRY | No.2 | SPF |
| K - G | 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 | 2.25 | 2.00 |
| B | TTWW-I | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| C | TMW+w | MT20 | 2.0 | 4.0 | | |
| D | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| E | TMWW-t | MT20 | 4.0 | 6.0 | | |
| F | TTWW-I | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| G | TMWW-t | MT20 | 4.0 | 6.0 | 2.00 | 2.00 |
| H | TBM-h | MT20 | 3.0 | 4.0 | 1.25 | 2.00 |
| J | BWM-I | MT20 | 2.0 | 4.0 | | |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |
| L, M, P | | | | | | |
| L | BMWW-t | MT20 | 4.0 | 6.0 | | |
| N | BS-t | MT20 | 4.0 | 6.0 | | |
| O | BMWWW-t | MT20 | 5.0 | 6.0 | | |
| 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| Q | 1574 | 0 | 1574 | 0 | 0 | MECHANICAL | |
| K | 1726 | 0 | 1726 | 0 | 0 | 5-8 | 2-2 |

A SUITABLE HANGER/MECHANICAL CONNECTION IS REQUIRED AT JOINT Q. MINIMUM BEARING LENGTH AT JOINT Q = 1-11.

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| Q | 1136 | 618 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 517 / 0 | 0 / 0 |
| K | 1245 | 682 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 563 / 0 | 0 / 0 |

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

**BRACING**

FOR SECTION B-F, MAX. PURLIN SPACING = 2.00 FT.
FOR OTHER SECTIONS, TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 5.80 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

MAX. UNBRACED INTERIOR CHORD LENGTH = 6.28 FT

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

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF B-P, C-O, E-O, E-M, F-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

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -987 / 0 | -78.0 | -78.0 | 0.31 (1) | 5.90 |
| B- C | -1211 / 0 | -93.0 | -93.0 | 0.67 (1) | 2.00 |
| C- T | -1212 / 0 | -93.0 | -93.0 | 0.67 (1) | 2.00 |
| T- D | -1212 / 0 | -93.0 | -93.0 | 0.67 (1) | 2.00 |
| D- E | -1212 / 0 | -93.0 | -93.0 | 0.67 (1) | 2.00 |
| E- F | -1220 / 0 | -93.0 | -93.0 | 0.68 (1) | 2.00 |
| F- G | -1048 / 0 | -78.0 | -78.0 | 0.29 (1) | 5.80 |
| G- S | 0 / 65 | -78.0 | -78.0 | 0.25 (1) | 10.00 |
| S- H | -85 / 3 | -78.0 | -78.0 | 0.02 (1) | 6.25 |
| Q- A | -1546 / 0 | 0.0 | 0.0 | 0.64 (1) | 6.62 |
| Q- P | 0 / 0 | -18.5 | -18.5 | 0.14 (4) | 10.00 |
| P- O | 0 / 634 | -18.5 | -18.5 | 0.23 (4) | 10.00 |
| O- N | 0 / 1220 | -18.5 | -18.5 | 0.31 (4) | 10.00 |
| N- M | 0 / 1220 | -18.5 | -18.5 | 0.31 (4) | 10.00 |
| M- L | 0 / 657 | -18.5 | -18.5 | 0.24 (4) | 10.00 |
| L- K | -2 / 15 | -18.5 | -18.5 | 0.15 (4) | 10.00 |
| J- R | -6 / 38 | -18.5 | -18.5 | 0.05 (1) | 10.00 |
| R- H | -6 / 38 | -18.5 | -18.5 | 0.05 (1) | 10.00 |
| H- I | 0 / 0 | -33.5 | -33.5 | 0.00 (4) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| P- B | -502 / 0 | 0.34 (1) |
| B- O | 0 / 1001 | 0.16 (1) |
| O- C | -682 / 0 | 0.46 (1) |
| O- E | -15 / 0 | 0.01 (1) |
| M- E | -672 / 0 | 0.46 (1) |
| M- F | 0 / 977 | 0.16 (1) |
| L- F | -430 / 0 | 0.29 (1) |
| A- P | 0 / 891 | 0.20 (1) |
| K- J | -1694 / 0 | 0.10 (1) |
| J- G | -1710 / 0 | 0.08 (1) |
| L- G | 0 / 848 | 0.19 (1) |
| R- S | 0 / 147 | 0.00 (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/C**

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

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 (0.98")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.04")
ALLOWABLE DEFL.(TL)= L/360 (0.98")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.10")

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

CSI: TC=0.68/1.00 (E-F:1) , BC=0.31/1.00 (M-O:4) , WB=0.46/1.00 (C-O:1) , SSI=0.30/1.00 (E-F: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (A) (INPUT = 0.90 )
JSI METAL= 0.37 (A) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H14 | | 1 | TRUSS DESC. JT 45147 | E22052068 |

Alpa Roof Truss, Maple

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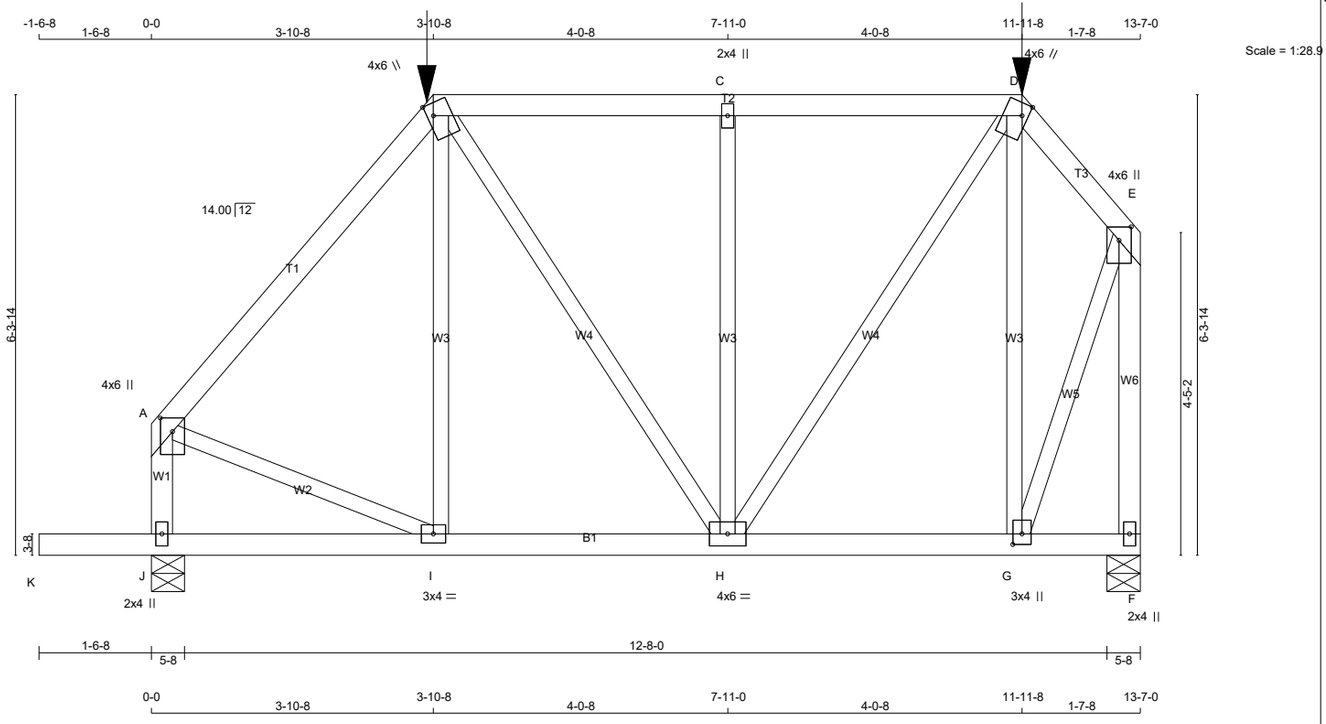


TOTAL WEIGHT = 75 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x4 | DRY | No.2 | SPF |
| B - D | 2x4 | DRY | No.2 | SPF |
| D - E | 2x4 | DRY | No.2 | SPF |
| J - A | 2x4 | DRY | No.2 | SPF |
| F - E | 2x4 | DRY | No.2 | SPF |
| K - F | 2x4 | DRY | No.2 | SPF |
| ALL WEBS EXCEPT | 2x3 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW+p | MT20 | 4.0 | 6.0 | 2.25 | 2.00 |
| B | TTWW+m | MT20 | 4.0 | 6.0 | 2.00 | 1.00 |
| C | TMW+w | MT20 | 2.0 | 4.0 | | |
| D | TTWW+m | MT20 | 4.0 | 6.0 | 2.00 | 1.00 |
| E | TMVW+p | MT20 | 4.0 | 6.0 | 2.25 | 2.00 |
| F | BMV1+p | MT20 | 2.0 | 4.0 | | |
| G | BMWW+t | MT20 | 3.0 | 4.0 | 1.75 | 1.50 |
| H | BMWWW-t | MT20 | 4.0 | 6.0 | | |
| I | BMWW-t | MT20 | 3.0 | 4.0 | | |
| J | 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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| F | 965 | 0 | 965 | 0 | 0 | 5-8 | 1-8 |
| J | 1078 | 0 | 1078 | 0 | 0 | 5-8 | 1-8 |

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| F | 688 | 420 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 268 / 0 | 0 / 0 |
| J | 769 | 465 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 303 / 0 | 0 / 0 |

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

**BRACING**

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

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

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | -738 / 0 | -78.0 | -78.0 | 0.24 (1) | | 6.25 |
| B- C | -583 / 0 | -114.5 | -114.5 | 0.34 (1) | | 6.25 |
| C- D | -583 / 0 | -114.5 | -114.5 | 0.34 (1) | | 6.25 |
| D- E | -393 / 0 | -78.0 | -78.0 | 0.04 (1) | | 6.25 |
| J- A | -886 / 0 | 0.0 | 0.0 | 0.11 (1) | | 7.81 |
| F- E | -958 / 0 | 0.0 | 0.0 | 0.34 (1) | | 7.81 |
| K- J | 0 / 0 | -96.5 | -96.5 | 0.17 (1) | | 10.00 |
| J- I | 0 / 0 | -27.2 | -27.2 | 0.11 (4) | | 10.00 |
| I- H | 0 / 477 | -27.2 | -27.2 | 0.16 (4) | | 10.00 |
| H- G | 0 / 244 | -27.2 | -27.2 | 0.11 (4) | | 10.00 |
| G- F | 0 / 0 | -27.2 | -27.2 | 0.07 (4) | | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| I- B | -48 / 69 | 0.03 (1) |
| B- H | 0 / 190 | 0.05 (1) |
| H- C | -560 / 0 | 0.37 (1) |
| H- D | 0 / 606 | 0.15 (1) |
| G- D | -498 / 0 | 0.33 (1) |
| A- I | 0 / 508 | 0.13 (1) |
| G- E | 0 / 645 | 0.16 (1) |

FACTORED CONCENTRATED LOADS (LBS)

| JT | LOC. | LC1 | MAX- | MAX+ | FACE | DIR. | TYPE | HEEL | CONN. |
|---|---|---|---|---|---|---|---|---|---|
| B | 3-10-8 | -120 | -120 | --- | FRONT | VERT | TOTAL | --- | C1 |
| D | 11-11-8 | -50 | -50 | --- | FRONT | VERT | TOTAL | --- | C1 |

**CONNECTION REQUIREMENTS**

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

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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

GIRDER TYPE: CPrimeHip
LEFT SETBACK = 3-10-8
RIGHT SETBACK = 1-7-8
END SETBACK = 3-10-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDT'L LOADS BASED ON 55 % OF GSL.

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

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

(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 (0.03")

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=0.34/1.00 (C-D:1) , BC=0.17/1.00 (J-K:1) , WB=0.37/1.00 (C-H:1) , SSI=0.25/1.00 (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

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.75 (G) (INPUT = 0.90 )
JSI METAL= 0.28 (A) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H15 | 1 | 1 | TRUSS DESC. JT 45147 | E22052069 |

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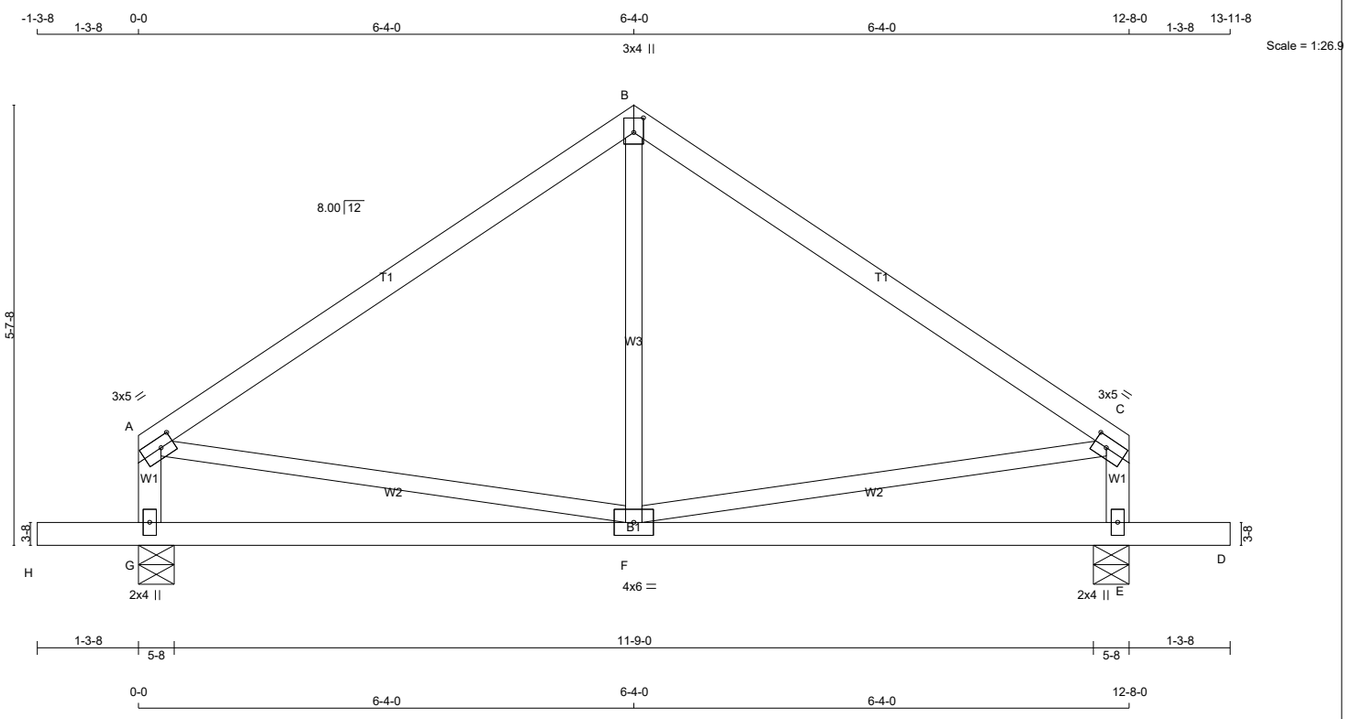


TOTAL WEIGHT = 2 X 51 = 102 lb

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x4 | DRY | No.2 | SPF |
| B - C | 2x4 | DRY | No.2 | SPF |
| G - A | 2x4 | DRY | No.2 | SPF |
| E - C | 2x4 | DRY | No.2 | SPF |
| H - D | 2x4 | DRY | No.2 | SPF |
| ALL WEBS EXCEPT | 2x3 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 3.0 | 5.0 | 1.50 | 2.00 |
| B | TTW+p | MT20 | 3.0 | 4.0 | 2.25 | 1.50 |
| C | TMVW-t | MT20 | 3.0 | 5.0 | 1.50 | 2.00 |
| E | BMV1+p | MT20 | 2.0 | 4.0 | | |
| F | BMWWW-t | MT20 | 4.0 | 6.0 | | |
| G | 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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG | REQRD BRG |
|---|---|---|---|---|---|---|---|
| G | 1022 | 0 | 1022 | 0 | 0 | 5-8 | 1-8 |
| E | 1022 | 0 | 1022 | 0 | 0 | 5-8 | 1-8 |

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| G | 729 | 445 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 284 / 0 | 0 / 0 |
| E | 729 | 445 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 284 / 0 | 0 / 0 |

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

**BRACING**

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 5.87 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

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

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -715 / 0 | -78.0 | -78.0 | 0.65 (1) | 5.87 |
| B- C | -715 / 0 | -78.0 | -78.0 | 0.65 (1) | 5.87 |
| G- A | -745 / 0 | 0.0 | 0.0 | 0.08 (1) | 7.81 |
| E- C | -745 / 0 | 0.0 | 0.0 | 0.08 (1) | 7.81 |
| H- G | 0 / 0 | -96.5 | -96.5 | 0.12 (1) | 10.00 |
| G- F | 0 / 0 | -63.7 | -63.7 | 0.46 (1) | 10.00 |
| F- E | 0 / 0 | -63.7 | -63.7 | 0.46 (1) | 10.00 |
| E- D | 0 / 0 | -96.5 | -96.5 | 0.12 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| F- B | 0 / 299 | 0.08 (4) |
| A- F | 0 / 603 | 0.15 (1) |
| F- C | 0 / 603 | 0.15 (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/C**

GIRDER TYPE: CStdGirder
START DISTANCE = 0-0
START SPAN CARRIED = 3-10-8
END DISTANCE = 12-8-0
END SPAN CARRIED = 3-10-8
END WALL WIDTH = 0-0
APPLIED TO FRONT SIDE OF BOTTOM CHORD.
- ADDT'L LOADS BASED ON 55 % OF GSL.

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

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

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

ALLOWABLE DEFL.(LL)= L/360 (0.42")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.05")
ALLOWABLE DEFL.(TL)= L/360 (0.42")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.12")

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

CSI: TC=0.65/1.00 (B-C:1) , BC=0.46/1.00 (F-G:1) , WB=0.15/1.00 (A-F:1) , SSI=0.22/1.00 (E-F: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

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.77 (F) (INPUT = 0.90 )
JSI METAL= 0.24 (C) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H16 | | 1 | TRUSS DESC. JT 45147 | E22052070 |

Alpha Roof Truss, Maple

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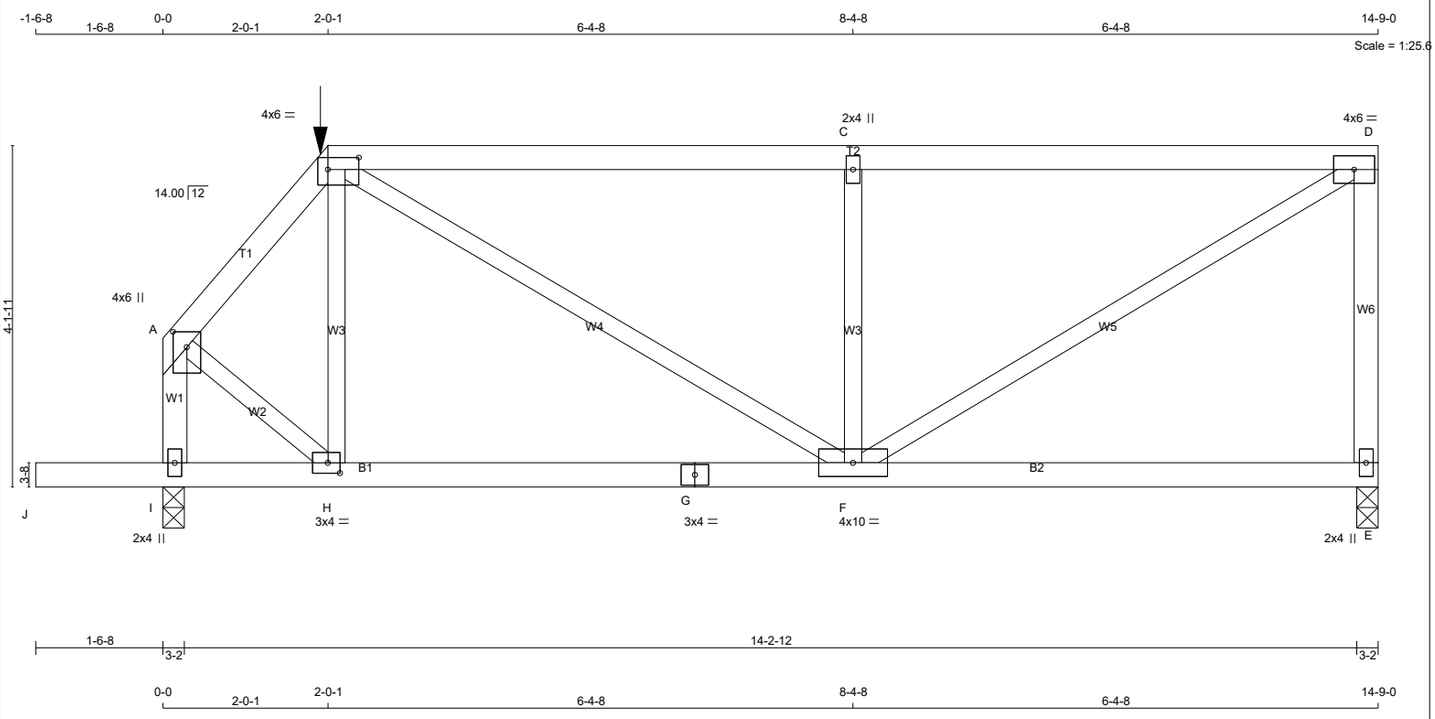


TOTAL WEIGHT = 62 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x4 | DRY | No.2 | SPF |
| B - D | 2x4 | DRY | 1650F 1.5E | SPF |
| E - D | 2x4 | DRY | No.2 | SPF |
| I - A | 2x4 | DRY | No.2 | SPF |
| J - G | 2x4 | DRY | No.2 | SPF |
| G - E | 2x4 | DRY | No.2 | SPF |
| ALL WEBS EXCEPT | 2x3 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW+p | MT20 | 4.0 | 6.0 | 2.25 | 2.00 |
| B | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| C | TMW+w | MT20 | 2.0 | 4.0 | | |
| D | TMVW-t | MT20 | 4.0 | 6.0 | | |
| E | BMV1+p | MT20 | 2.0 | 4.0 | | |
| F | BMWWW-t | MT20 | 4.0 | 10.0 | | |
| G | BS-t | MT20 | 3.0 | 4.0 | | |
| H | BMWW-t | MT20 | 3.0 | 4.0 | 1.50 | 1.75 |
| I | 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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| E | 1130 | 0 | 1130 | 0 | 0 | 3-2 | 1-8 |
| I | 1269 | 0 | 1269 | 0 | 0 | 3-2 | 1-8 |

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | SNOW | MAX./MIN. COMPONENT REACTIONS LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| E | 806 | 492 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 313 / 0 | 0 / 0 |
| I | 905 | 550 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 355 / 0 | 0 / 0 |

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

**BRACING**

TOP CHORD TO BE SHEATHED OR MAX. PURLIN SPACING = 4.64 FT.
MAX. UNBRACED BOTTOM CHORD LENGTH = 10.00 FT OR RIGID CEILING DIRECTLY APPLIED.

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

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | -817 / 0 | -78.0 | -78.0 | 0.07 (1) | 6.25 |
| B- C | -1247 / 0 | -124.3 | -124.3 | 0.84 (1) | 4.64 |
| C- D | -1247 / 0 | -124.3 | -124.3 | 0.84 (1) | 4.64 |
| E- D | -1054 / 0 | 0.0 | 0.0 | 0.29 (1) | 7.63 |
| I- A | -1061 / 0 | 0.0 | 0.0 | 0.13 (1) | 7.61 |
| J- I | 0 / 0 | -96.5 | -96.5 | 0.17 (1) | 10.00 |
| I- H | 0 / 0 | -29.5 | -29.5 | 0.17 (1) | 10.00 |
| H- G | 0 / 519 | -29.5 | -29.5 | 0.38 (4) | 10.00 |
| G- F | 0 / 519 | -29.5 | -29.5 | 0.38 (4) | 10.00 |
| F- E | 0 / 0 | -29.5 | -29.5 | 0.32 (4) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| H- B | -271 / 0 | 0.07 (1) |
| F- B | 0 / 848 | 0.21 (1) |
| F- C | -975 / 0 | 0.27 (1) |
| F- D | 0 / 1457 | 0.36 (1) |
| A- H | 0 / 637 | 0.16 (1) |

FACTORED CONCENTRATED LOADS (LBS)

| JT | LOC. | LC1 | MAX- | MAX+ | FACE | DIR. | TYPE | HEEL | CONN. |
|---|---|---|---|---|---|---|---|---|---|
| B | 2-0-1 | -75 | -75 | --- | FRONT | VERT | TOTAL | --- | C1 |

**CONNECTION REQUIREMENTS**

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

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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

GIRDER TYPE: CPrimeHip
LEFT SETBACK = 2-0-1
RIGHT SETBACK = 0-0
END SETBACK = 4-4-8
END WALL WIDTH = 0-0
CORNER FRAMING TYPE: CONVENTIONAL
END JACK TYPE: CONVENTIONAL
APPLIED TO FRONT SIDE
- ADDT'L LOADS BASED ON 55 % OF GSL.

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

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

DESIGN ASSUMPTIONS
-OVERHANG NOT TO BE ALTERED OR CUT OFF.

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

ALLOWABLE DEFL.(LL)= L/360 (0.49")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.03")
ALLOWABLE DEFL.(TL)= L/360 (0.49")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.10")

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/ 620 ( 0.03")

CSI: TC=0.84/1.00 (C-D:1) , BC=0.38/1.00 (F-H:4) , WB=0.36/1.00 (D-F:1) , SSI=0.42/1.00 (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

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.80 (D) (INPUT = 0.90 )
JSI METAL= 0.32 (D) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | H17S | | 1 | TRUSS DESC. JT 45147 | E22052071 |

Alpa Roof Truss, Maple

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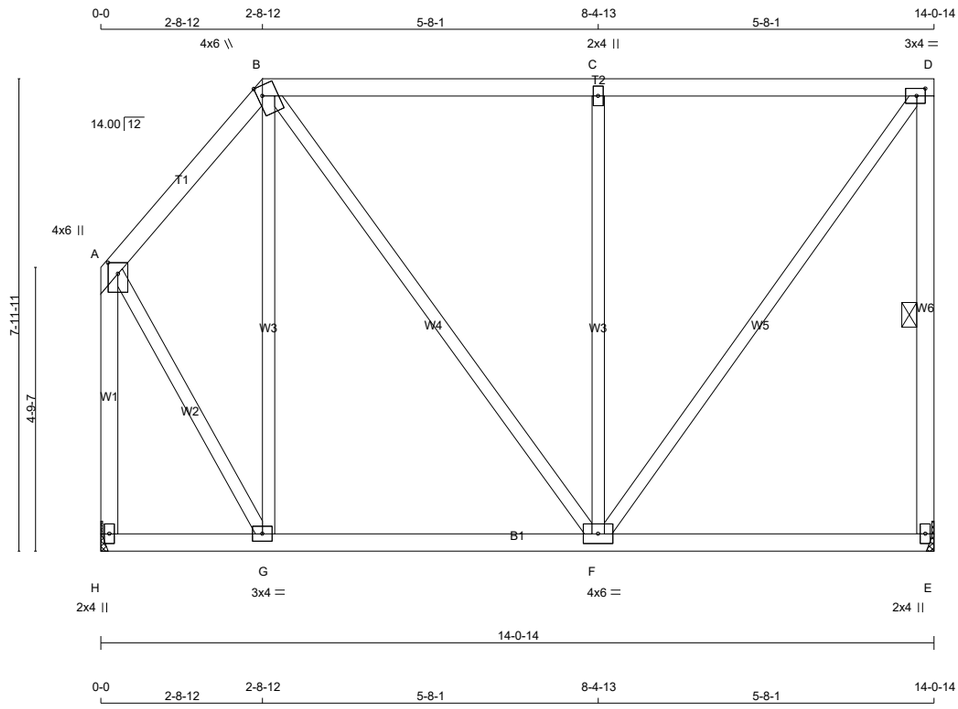



TOTAL WEIGHT = 79 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - B | 2x4 | DRY | No.2 | SPF |
| B - D | 2x4 | DRY | No.2 | SPF |
| E - D | 2x4 | DRY | No.2 | SPF |
| H - A | 2x4 | DRY | No.2 | SPF |
| H - E | 2x4 | DRY | No.2 | SPF |
| ALL WEBS EXCEPT | 2x3 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| A | TMVW+p | MT20 | 4.0 | 6.0 | 2.25 | 2.00 |
| B | TTWW+m | MT20 | 4.0 | 6.0 | 2.00 | 1.00 |
| C | TMW+w | MT20 | 2.0 | 4.0 | | |
| D | TMVW-t | MT20 | 3.0 | 4.0 | 1.50 | 1.75 |
| E | BMV1+p | MT20 | 2.0 | 4.0 | | |
| F | BMWWW-t | MT20 | 4.0 | 6.0 | | |
| G | BMWW-t | MT20 | 3.0 | 4.0 | | |
| H | BMV1+p | MT20 | 2.0 | 4.0 | | |

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

LICENSED PROFESSIONAL ENGINEER
Y. WIDYA
100225448
06/14/2022
PROVINCE OF ONTARIO

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG | REQRD BRG |
|---|---|---|---|---|---|---|---|
| E | 679 | 0 | 679 | 0 | 0 | MECHANICAL | |
| H | 679 | 0 | 679 | 0 | 0 | MECHANICAL | |

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

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| E | 484 | 295 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 189 / 0 | 0 / 0 |
| H | 484 | 295 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 189 / 0 | 0 / 0 |

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF D-E.

END VERTICAL(S) MUST BE SHEATHED OR HAVE BRACES AS INDICATED IN THE MAX. UNBRACED LENGTH COLUMN OF THE TABLE BELOW

**LOADING**

TOTAL LOAD CASES: (4)

| CHORDS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH | WEBS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|---|---|---|---|---|---|
| A- B | -315 / 0 | -78.0 | -78.0 | 0.10 (1) | 6.25 | G- B | -232 / 0 | 0.28 (1) |
| B- C | -346 / 0 | -78.0 | -78.0 | 0.42 (1) | 6.25 | B- F | 0 / 244 | 0.05 (1) |
| C- D | -346 / 0 | -78.0 | -78.0 | 0.42 (1) | 6.25 | F- C | -547 / 0 | 0.66 (1) |
| E- D | -636 / 0 | 0.0 | 0.0 | 0.18 (1) | 6.25 | F- D | 0 / 583 | 0.13 (1) |
| H- A | -664 / 0 | 0.0 | 0.0 | 0.27 (1) | 7.81 | A- G | 0 / 377 | 0.08 (1) |
| H- G | 0 / 0 | -18.5 | -18.5 | 0.08 (4) | 10.00 | | | |
| G- F | 0 / 201 | -18.5 | -18.5 | 0.17 (4) | 10.00 | | | |
| F- E | 0 / 0 | -18.5 | -18.5 | 0.15 (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**

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

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

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

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

ALLOWABLE DEFL.(LL)= L/360 (0.47")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")
ALLOWABLE DEFL.(TL)= L/360 (0.47")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.04")

CSI: TC=0.42/1.00 (C-D:1) , BC=0.17/1.00 (F-G:4) , WB=0.66/1.00 (C-F:1) , SSI=0.21/1.00 (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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

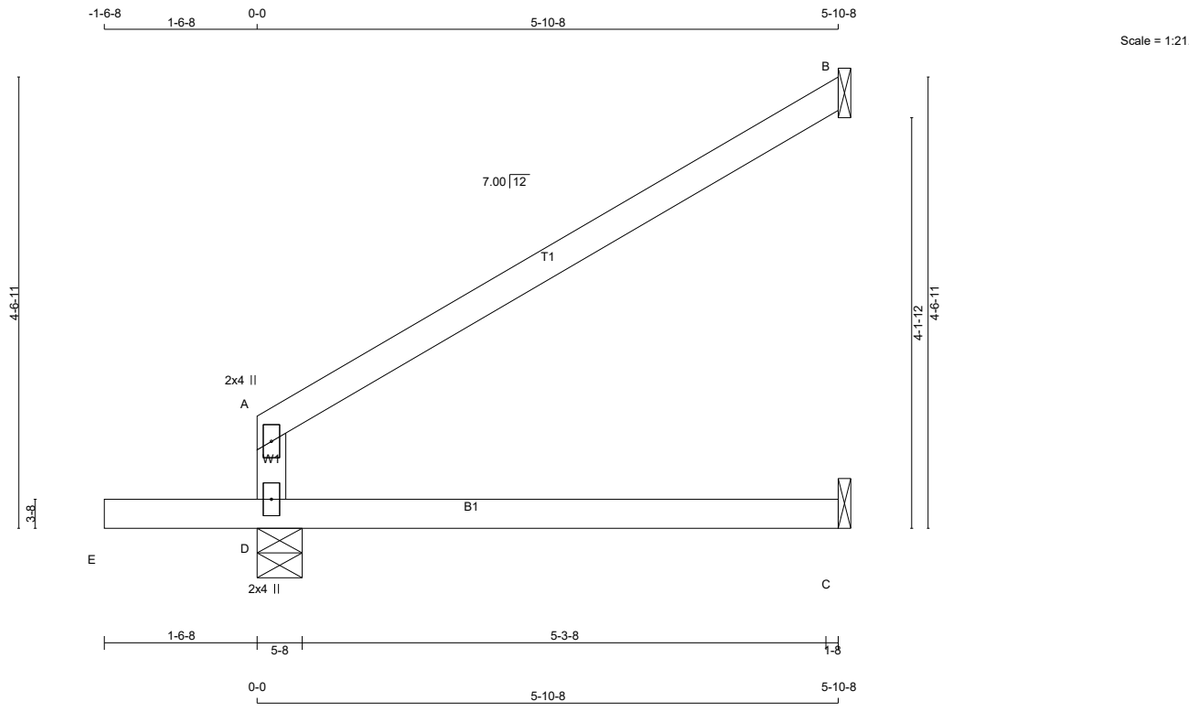
PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.88 (D) (INPUT = 0.90 )
JSI METAL= 0.18 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | J01 | | 1 | TRUSS DESC. JT 45147 | E22052072 |






TOTAL WEIGHT = 18 X 17 = 309 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 | | |

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| D | 488 | 0 | 488 | 0 | 0 | 5-8 | 1-8 |
| B | 187 | 0 | 187 | 0 | 0 | 1-8 | 1-8 |
| C | 41 | 0 | 46 | 0 | 0 | 1-8 | 1-8 |

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

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| D | 348 | 211 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 137 / 0 | 0 / 0 |
| B | 129 | 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 MEMB. FR-TO | MAX. FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 MAX CSI (LC) | WEBS MAX. UNBRAC LENGTH | MEMB. FR-TO | MAX. FORCE (LBS) | MAX CSI (LC) |
|---|---|---|---|---|---|---|---|---|
| D- A | -271 / 0 | 0.0 | 0.0 | 0.34 (1) | 7.81 | | | |
| A- B | -21 / 0 | -78.0 | -78.0 | 0.34 (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 | | | |

[M]

**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=0.34/1.00 (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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.16 (A) (INPUT = 0.90 )
JSI METAL= 0.13 (A) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | J01T | | 1 | TRUSS DESC. JT 45147 | E22052073 |

Alpa Roof Truss, Maple

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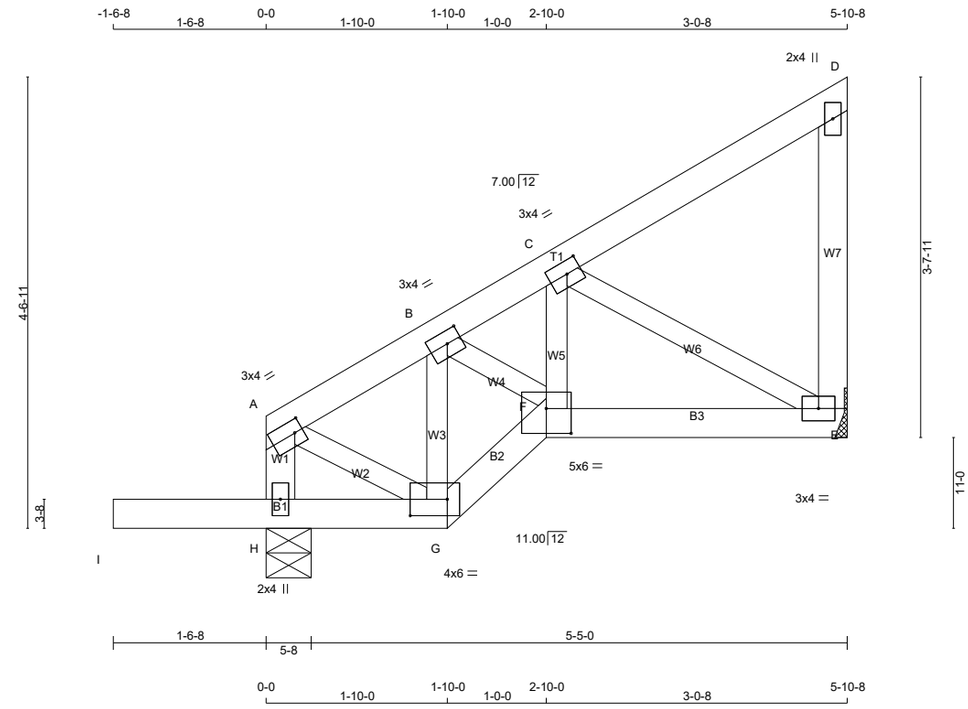


TOTAL WEIGHT = 7 X 28 = 197 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| H - A | 2x4 | DRY | No.2 | SPF |
| A - D | 2x4 | DRY | No.2 | SPF |
| E - D | 2x4 | DRY | No.2 | SPF |
| I - G | 2x4 | DRY | No.2 | SPF |
| G - F | 2x4 | DRY | No.2 | SPF |
| F - E | 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 |
|---|---|---|---|---|---|---|
| A | TMVW-t | MT20 | 3.0 | 4.0 | 1.50 | 1.00 |
| B | TMWW-t | MT20 | 3.0 | 4.0 | 1.50 | 1.75 |
| C | TMWW-t | MT20 | 3.0 | 4.0 | 1.50 | 1.75 |
| D | TMV+p | MT20 | 2.0 | 4.0 | | |
| E | BMVW1-t | MT20 | 3.0 | 4.0 | | |
| F | BBWW-l | MT20 | 5.0 | 6.0 | 3.00 | 3.00 |
| G | BBWW-l | MT20 | 4.0 | 6.0 | 2.00 | 4.50 |
| H | BMV1+p | MT20 | 2.0 | 4.0 | | |

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

LICENSED PROFESSIONAL ENGINEER
Y. WIDYA
100225448
06/14/2022
PROVINCE OF ONTARIO

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG | REQRD BRG |
|---|---|---|---|---|---|---|---|
| H | 452 | 0 | 452 | 0 | 0 | 5-8 | 1-8 |
| E | 264 | 0 | 264 | 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 COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| H | 322 | 197 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 125 / 0 | 0 / 0 |
| E | 188 | 115 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 73 / 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

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX UNBRAC LENGTH |
|---|---|---|---|---|---|
| H- A | -223 / 0 | 0.0 | 0.0 | 0.02 (1) | 7.81 |
| A- B | -180 / 0 | -78.0 | -78.0 | 0.04 (1) | 6.25 |
| B- C | -284 / 0 | -78.0 | -78.0 | 0.08 (1) | 6.25 |
| C- D | -10 / 0 | -78.0 | -78.0 | 0.08 (1) | 10.00 |
| E- D | -96 / 0 | 0.0 | 0.0 | 0.02 (1) | 7.81 |
| I- H | 0 / 0 | -96.5 | -96.5 | 0.16 (1) | 10.00 |
| H- G | 0 / 0 | -18.5 | -18.5 | 0.16 (1) | 10.00 |
| G- F | 0 / 193 | -18.5 | -18.5 | 0.03 (1) | 10.00 |
| F- E | 0 / 259 | -18.5 | -18.5 | 0.07 (4) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| A- G | 0 / 170 | 0.04 (1) |
| G- B | -235 / 0 | 0.04 (1) |
| B- F | 0 / 156 | 0.04 (1) |
| F- C | 0 / 73 | 0.02 (4) |
| C- E | -296 / 0 | 0.06 (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/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 (0.20")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.00")
ALLOWABLE DEFL.(TL)= L/360 (0.20")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.01")

CANTILEVER DEFLECTION:
ALLOWABLE DEFL.(LL)= L/120 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 ( 0.02")
ALLOWABLE DEFL.(TL)= L/120 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 601 ( 0.03")

CSI: TC=0.08/1.00 (C-D:1) , BC=0.16/1.00 (G-H:1) , WB=0.06/1.00 (C-E:1) , SSI=0.12/1.00 (H-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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.56 (A) (INPUT = 0.90 )
JSI METAL= 0.09 (E) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | J02 | | 1 | TRUSS DESC. | JT 45147 | E22052074 |

Alpa Roof Truss, Maple

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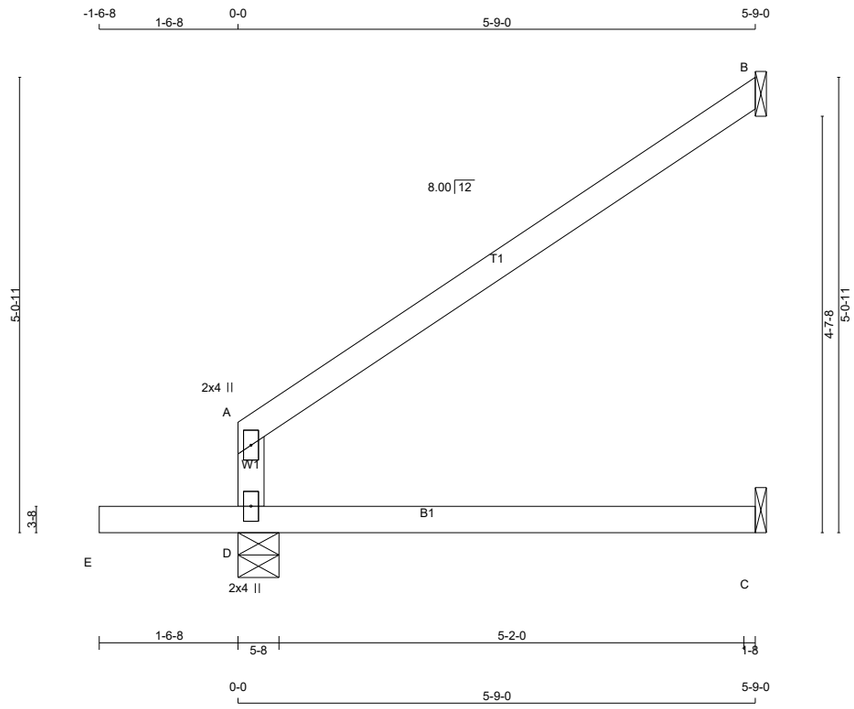


TOTAL WEIGHT = 12 X 17 = 208 lb

**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 | | |

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| D | 480 | 0 | 480 | 0 | 0 | 5-8 | 1-8 |
| B | 184 | 0 | 184 | 0 | 0 | 1-8 | 1-8 |
| C | 40 | 0 | 45 | 0 | 0 | 1-8 | 1-8 |

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

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| D | 342 | 207 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 135 / 0 | 0 / 0 |
| B | 127 | 99 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 28 / 0 | 0 / 0 |
| C | 32 | 0 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 32 / 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 MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 MAX CSI (LC) | WEBS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|---|---|
| D- A | -264 / 0 | 0.0 | 0.0 | 0.32 (1) | | | | 7.81 |
| A- B | -22 / 0 | -78.0 | -78.0 | 0.32 (1) | | | | 6.25 |
| E- D | 0 / 0 | -96.5 | -96.5 | 0.16 (1) | | | | 10.00 |
| D- C | 0 / 0 | -18.5 | -18.5 | 0.18 (4) | | | | 10.00 |

[M]

**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 (0.02")

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=0.32/1.00 (A-D:1) , BC=0.18/1.00 (C-D:4) , WB=0.00/1.00 (n/a:0) , SSI=0.17/1.00 (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

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.16 (A) (INPUT = 0.90 )
JSI METAL= 0.13 (A) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | J03 | | 1 | TRUSS DESC. | JT 45147 | E22052075 |

Alpa Roof Truss, Maple

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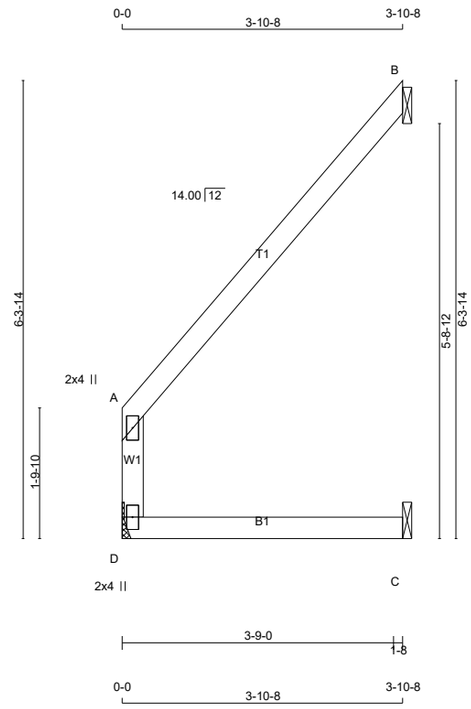


TOTAL WEIGHT = 5 X 13 = 66 lb

[M][F]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| D - A | 2x4 | DRY | No.2 | SPF |
| A - B | 2x4 | DRY | No.2 | SPF |
| D - 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 | | |

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

LICENSED PROFESSIONAL ENGINEER
Y. WIDYA
100225448
06/14/2022
PROVINCE OF ONTARIO

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| D | 187 | 0 | 187 | 0 | 0 | MECHANICAL | |
| B | 138 | 0 | 138 | 0 | 0 | 1-8 | 1-8 |
| C | 49 | 0 | 49 | 0 | 0 | 1-8 | 1-8 |

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

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

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| D | 133 | 81 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 52 / 0 | 0 / 0 |
| B | 96 | 73 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 23 / 0 | 0 / 0 |
| C | 38 | 9 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 29 / 0 | 0 / 0 |

**BRACING**

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

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

**LOADING**

TOTAL LOAD CASES: (4)

| CHORDS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 MAX CSI (LC) | MAX. UNBRAC LENGTH | WEBS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|---|---|---|---|---|---|
| D- A | -164 / 0 | 0.0 | 0.0 | 0.06 (1) | 7.81 | | | |
| A- B | -10 / 0 | -78.0 | -78.0 | 0.16 (1) | 6.25 | | | |
| D- C | 0 / 0 | -18.5 | -18.5 | 0.09 (1) | 10.00 | | | |

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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 (0.19")
CALCULATED VERT. DEFL.(LL) = L/ 999 (0.01")
ALLOWABLE DEFL.(TL)= L/360 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.02")

CSI: TC=0.16/1.00 (A-B:1) , BC=0.09/1.00 (C-D:1) , WB=0.00/1.00 (n/a:0) , SSI=0.08/1.00 (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

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.13 (A) (INPUT = 0.90 )
JSI METAL= 0.08 (A) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | J04 | | 1 | TRUSS DESC. JT 45147 | E22052076 |

Alpa Roof Truss, Maple

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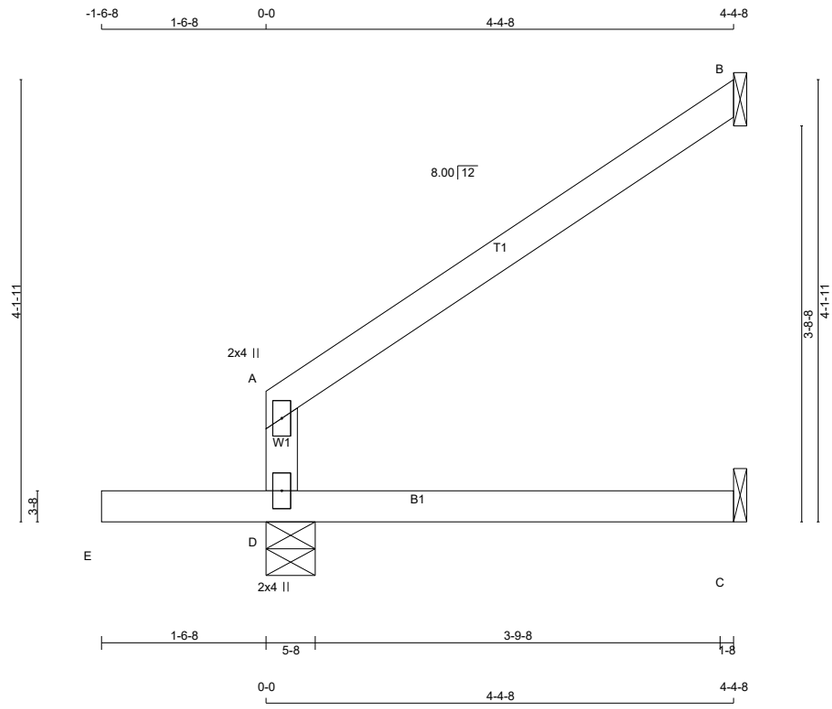


TOTAL WEIGHT = 7 X 14 = 97 lb
[M]

**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 | | |

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| D | 398 | 0 | 398 | 0 | 0 | 5-8 | 1-8 |
| B | 142 | 0 | 142 | 0 | 0 | 1-8 | 1-8 |
| C | 30 | 0 | 34 | 0 | 0 | 1-8 | 1-8 |

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

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| D | 284 | 172 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 112 / 0 | 0 / 0 |
| B | 99 | 77 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 22 / 0 | 0 / 0 |
| C | 24 | 0 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 24 / 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)

| CHORDS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 CSI (LC) | MAX UNBRAC LENGTH | WEBS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|---|---|---|---|---|---|
| D- A | -199 / 0 | 0.0 | 0.0 | 0.17 (1) | 7.81 | | | |
| A- B | -16 / 0 | -78.0 | -78.0 | 0.18 (1) | 6.25 | | | |
| E- D | 0 / 0 | -96.5 | -96.5 | 0.19 (7) | 10.00 | | | |
| D- C | 0 / 0 | -18.5 | -18.5 | 0.10 (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 (0.01")

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=0.18/1.00 (A-B:1) , BC=0.19/1.00 (D-E:7) , WB=0.00/1.00 (n/a:0) , SSI=0.14/1.00 (D-E:7)

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

COMPANION LIVE LOAD FACTOR = 1.00

AUTOSOLVE RIGHT HEEL ONLY

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

NAIL VALUES

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

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.12 (A) (INPUT = 0.90 )
JSI METAL= 0.10 (A) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | J05 | . | 1 | TRUSS DESC. JT 45147 | E22052077 |

Alpa Roof Truss, Maple

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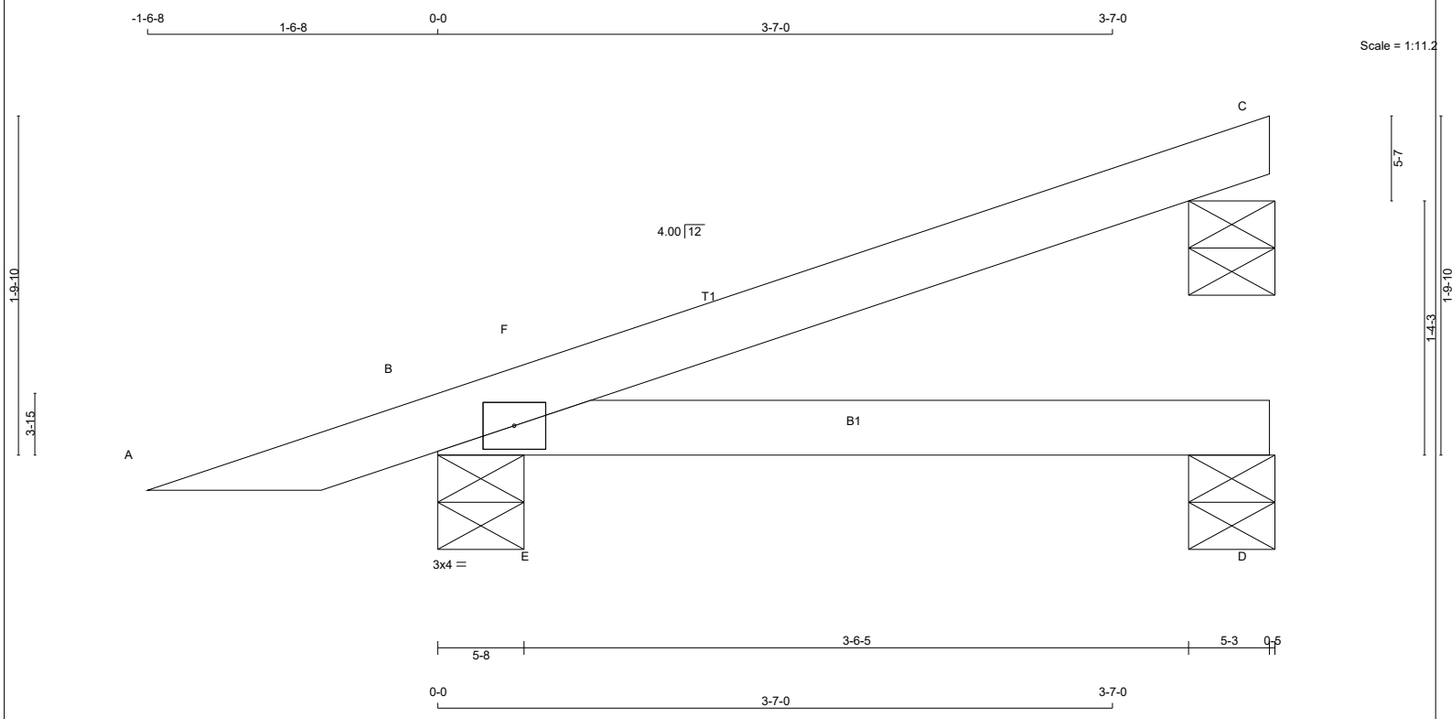


TOTAL WEIGHT = 4 X 12 = 49 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x4 | DRY | No.2 | SPF |
| B - D | 2x4 | 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 | | |

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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| C | 150 | 0 | 150 | 0 | 0 | 5-8 ( 5-3 ) | 5-3 |
| B | 330 | 0 | 330 | 0 | 0 | 5-8 | 1-8 |
| D | 63 | 0 | 63 | 0 | 0 | 5-8 ( 5-3 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

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

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| C | 105 | 77 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 27 / 0 | 0 / 0 |
| B | 233 | 155 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 77 / 0 | 0 / 0 |
| D | 47 | 15 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 32 / 0 | 0 / 0 |

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

**BRACING**

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

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

**LOADING**

TOTAL LOAD CASES: (7)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | 0 / 17 | -78.0 | -78.0 | 0.15 (5) | | 10.00 |
| B- F | -14 / 0 | -78.0 | -78.0 | 0.05 (4) | | 6.25 |
| F- C | 0 / 2 | -78.0 | -78.0 | 0.20 (1) | | 10.00 |
| B- E | 0 / 0 | -18.5 | -18.5 | 0.14 (1) | | 10.00 |
| E- D | 0 / 0 | -18.5 | -18.5 | 0.15 (1) | | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| E- F | -161 / 8 | 0.00 (1) |

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

(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 (0.02")
ALLOWABLE DEFL.(TL)= L/360 (0.19")
CALCULATED VERT. DEFL.(TL) = L/ 999 (0.04")

CSI: TC=0.20/1.00 (C-F:1) , BC=0.15/1.00 (D-E:1) , WB=0.00/1.00 (E-F:1) , SSI=0.14/1.00 (B-E:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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= 0.05 (B) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | P06A | | 1 | TRUSS DESC. | JT 45147 | E22052078 |

Alpa Roof Truss, Maple

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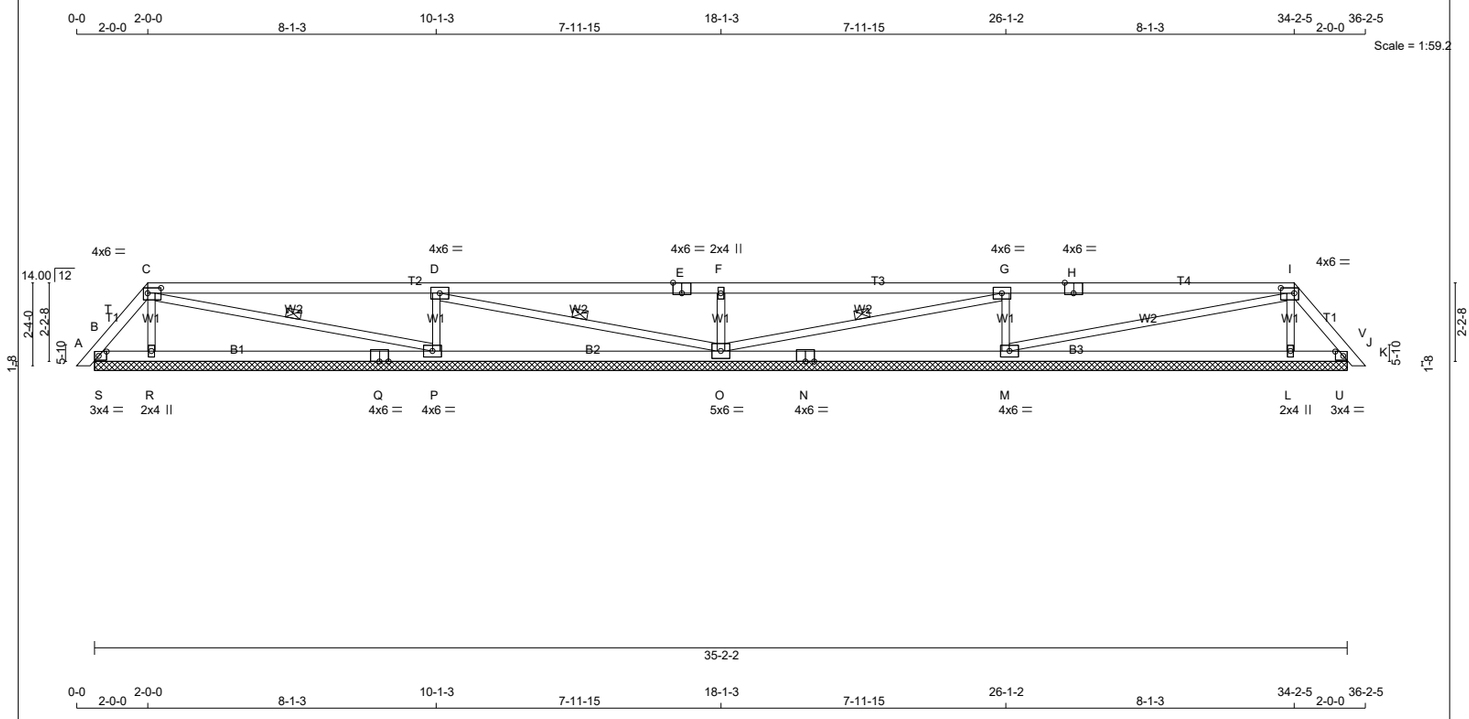


0-0 2-0-0 2-0-0 8-1-3 10-1-3 7-11-15 18-1-3 7-11-15 26-1-2 8-1-3 34-2-5 2-0-0 36-2-5

TOTAL WEIGHT = 116 lb

**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 - H | 2x4 | DRY | No.2 | SPF |
| H - I | 2x4 | DRY | No.2 | SPF |
| I - K | 2x4 | DRY | No.2 | SPF |
| B - Q | 2x4 | DRY | No.2 | SPF |
| Q - N | 2x4 | DRY | No.2 | SPF |
| N - J | 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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| F | TMW+w | MT20 | 2.0 | 4.0 | | |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| I | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| J | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| L | BMW1+w | MT20 | 2.0 | 4.0 | | |
| M | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| N | BS-t | MT20 | 4.0 | 6.0 | | |
| O | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| P | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| Q | BS-t | MT20 | 4.0 | 6.0 | | |
| R | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 109 | 0 | 109 | 0 | -15 | 35-2-2 ( 15-2-9 ) | 1-8 |
| R | 384 | 0 | 384 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| P | 868 | 0 | 868 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| O | 738 | 0 | 738 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| M | 858 | 0 | 858 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| L | 375 | 0 | 375 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| J | 122 | 0 | 122 | 0 | -13 | 35-2-2 ( 15-2-9 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

PROVIDE ANCHORAGE AT BEARING JOINT B FOR 150 LBS FACTORED UPLIFT
PROVIDE ANCHORAGE AT BEARING JOINT J FOR 150 LBS FACTORED UPLIFT

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 71 | 82 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 0 / -11 | 0 / 0 |
| R | 282 | 129 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 153 / 0 | 0 / 0 |
| P | 617 | 386 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 231 / 0 | 0 / 0 |
| O | 527 | 319 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 208 / 0 | 0 / 0 |
| M | 610 | 381 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 229 / 0 | 0 / 0 |
| L | 275 | 124 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 151 / 0 | 0 / 0 |
| J | 80 | 89 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 0 / -9 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, R, P, O, M, L, J

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF C-P, D-O, G-O.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- T | 0 / 77 | -78.0 | -78.0 | 0.06 (4) | 10.00 | |
| T- C | -83 / 0 | -78.0 | -78.0 | 0.04 (4) | 6.25 | |
| C- D | -16 / 0 | -78.0 | -78.0 | 0.74 (1) | 6.25 | |
| D- E | 0 / 4 | -78.0 | -78.0 | 0.74 (1) | 10.00 | |
| E- F | 0 / 4 | -78.0 | -78.0 | 0.74 (1) | 10.00 | |
| F- G | 0 / 4 | -78.0 | -78.0 | 0.74 (1) | 10.00 | |
| G- H | -45 / 0 | -78.0 | -78.0 | 0.74 (1) | 6.25 | |
| H- I | -45 / 0 | -78.0 | -78.0 | 0.74 (1) | 6.25 | |
| I- V | -100 / 0 | -78.0 | -78.0 | 0.04 (4) | 6.25 | |
| V- J | 0 / 72 | -78.0 | -78.0 | 0.05 (4) | 10.00 | |
| J- K | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- S | 0 / 45 | -18.5 | -18.5 | 0.04 (1) | 10.00 | |
| S- R | 0 / 45 | -18.5 | -18.5 | 0.20 (4) | 10.00 | |
| R- Q | 0 / 33 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| Q- P | 0 / 33 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| P- O | 0 / 17 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| O- N | 0 / 44 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| N- M | 0 / 44 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| M- L | 0 / 43 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| L- U | 0 / 55 | -18.5 | -18.5 | 0.20 (4) | 10.00 | |
| U- J | 0 / 55 | -18.5 | -18.5 | 0.04 (1) | 10.00 | |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| R- C | -226 / 0 | 0.03 (1) |
| C- P | -16 / 0 | 0.01 (1) |
| P- D | -714 / 0 | 0.11 (1) |
| D- O | -22 / 0 | 0.01 (1) |
| O- F | -575 / 0 | 0.09 (1) |
| O- G | -49 / 0 | 0.02 (1) |
| M- G | -707 / 0 | 0.11 (1) |
| M- I | 0 / 3 | 0.00 (4) |
| L- I | -217 / 0 | 0.03 (1) |
| S- T | -179 / 0 | 0.00 (1) |
| U- V | -176 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.74/1.00 (G-I:1) , BC=0.24/1.00 (M-O:4) , WB=0.11/1.00 (D-P: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.58 (O) (INPUT = 0.90 )
JSI METAL= 0.18 (H) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | P06B | | 1 | TRUSS DESC. JT 45147 | E22052079 |

Alpha Roof Truss, Maple

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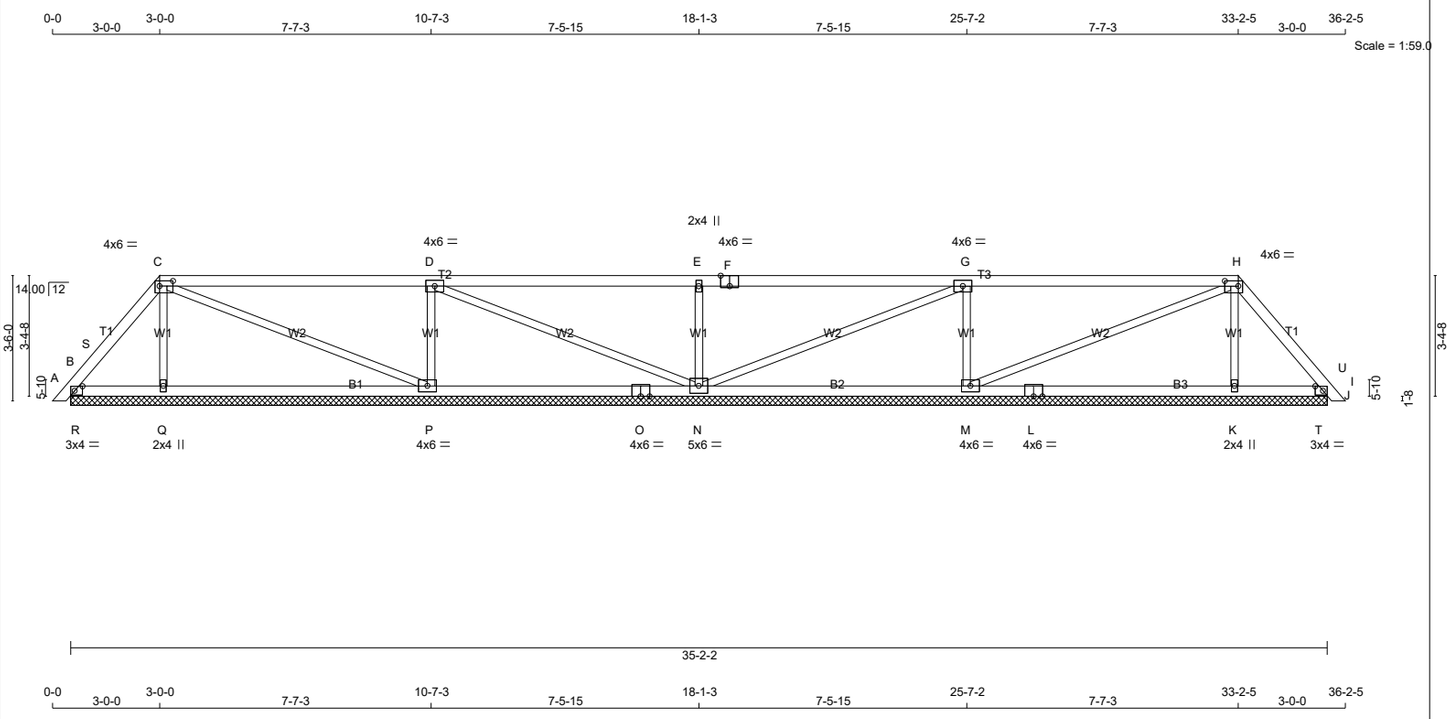





TOTAL WEIGHT = 122 lb
[M]

**LUMBER**
N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x4 | DRY | No.2 | SPF |
| C - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| H - J | 2x4 | DRY | No.2 | SPF |
| B - O | 2x4 | DRY | No.2 | SPF |
| O - L | 2x4 | DRY | No.2 | SPF |
| L - I | 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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TMW+w | MT20 | 2.0 | 4.0 | | |
| F | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| I | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |
| L | BS-t | MT20 | 4.0 | 6.0 | | |
| M | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| N | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| O | BS-t | MT20 | 4.0 | 6.0 | | |
| P | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| Q | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 207 | 0 | 207 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| Q | 353 | 0 | 353 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| P | 803 | 0 | 803 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| N | 730 | 0 | 730 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| M | 803 | 0 | 803 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| K | 353 | 0 | 353 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| I | 207 | 0 | 207 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 143 | 115 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 28 / 0 | 0 / 0 |
| Q | 257 | 125 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 132 / 0 | 0 / 0 |
| P | 571 | 356 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 216 / 0 | 0 / 0 |
| N | 520 | 320 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 200 / 0 | 0 / 0 |
| M | 571 | 356 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 216 / 0 | 0 / 0 |
| K | 257 | 125 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 132 / 0 | 0 / 0 |
| I | 143 | 115 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 28 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, Q, P, N, M, K, I

**BRACING**

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

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

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- S | 0 / 44 | -78.0 | -78.0 | 0.05 (1) | 10.00 |
| S- C | -115 / 0 | -78.0 | -78.0 | 0.05 (1) | 6.25 |
| C- D | -26 / 0 | -78.0 | -78.0 | 0.65 (1) | 6.25 |
| D- E | 0 / 39 | -78.0 | -78.0 | 0.66 (1) | 10.00 |
| E- F | 0 / 39 | -78.0 | -78.0 | 0.66 (1) | 10.00 |
| F- G | 0 / 39 | -78.0 | -78.0 | 0.66 (1) | 10.00 |
| G- H | -26 / 0 | -78.0 | -78.0 | 0.65 (1) | 6.25 |
| H- U | -115 / 0 | -78.0 | -78.0 | 0.05 (1) | 6.25 |
| U- I | 0 / 44 | -78.0 | -78.0 | 0.05 (1) | 10.00 |
| I- J | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- R | 0 / 67 | -18.5 | -18.5 | 0.07 (1) | 10.00 |
| R- Q | 0 / 67 | -18.5 | -18.5 | 0.16 (4) | 10.00 |
| Q- P | 0 / 60 | -18.5 | -18.5 | 0.22 (4) | 10.00 |
| P- O | 0 / 26 | -18.5 | -18.5 | 0.22 (4) | 10.00 |
| O- N | 0 / 26 | -18.5 | -18.5 | 0.22 (4) | 10.00 |
| N- M | 0 / 26 | -18.5 | -18.5 | 0.22 (4) | 10.00 |
| M- L | 0 / 60 | -18.5 | -18.5 | 0.22 (4) | 10.00 |
| L- K | 0 / 60 | -18.5 | -18.5 | 0.22 (4) | 10.00 |
| K- T | 0 / 67 | -18.5 | -18.5 | 0.16 (4) | 10.00 |
| T- I | 0 / 67 | -18.5 | -18.5 | 0.07 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| Q- C | -216 / 0 | 0.04 (1) |
| C- P | -37 / 0 | 0.05 (1) |
| P- D | -647 / 0 | 0.13 (1) |
| D- N | -70 / 0 | 0.10 (1) |
| N- E | -539 / 0 | 0.11 (1) |
| N- G | -70 / 0 | 0.10 (1) |
| M- G | -647 / 0 | 0.13 (1) |
| M- H | -37 / 0 | 0.05 (1) |
| K- H | -216 / 0 | 0.04 (1) |
| R- S | -262 / 0 | 0.00 (1) |
| T- U | -262 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.66/1.00 (D-E:1) , BC=0.22/1.00 (P-Q:4) , WB=0.13/1.00 (D-P:1) , SSI=0.28/1.00 (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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.84 (N) (INPUT = 0.90 )
JSI METAL= 0.19 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | P06C | | 1 | TRUSS DESC. JT 45147 | E22052080 |

Alpha Roof Truss, Maple

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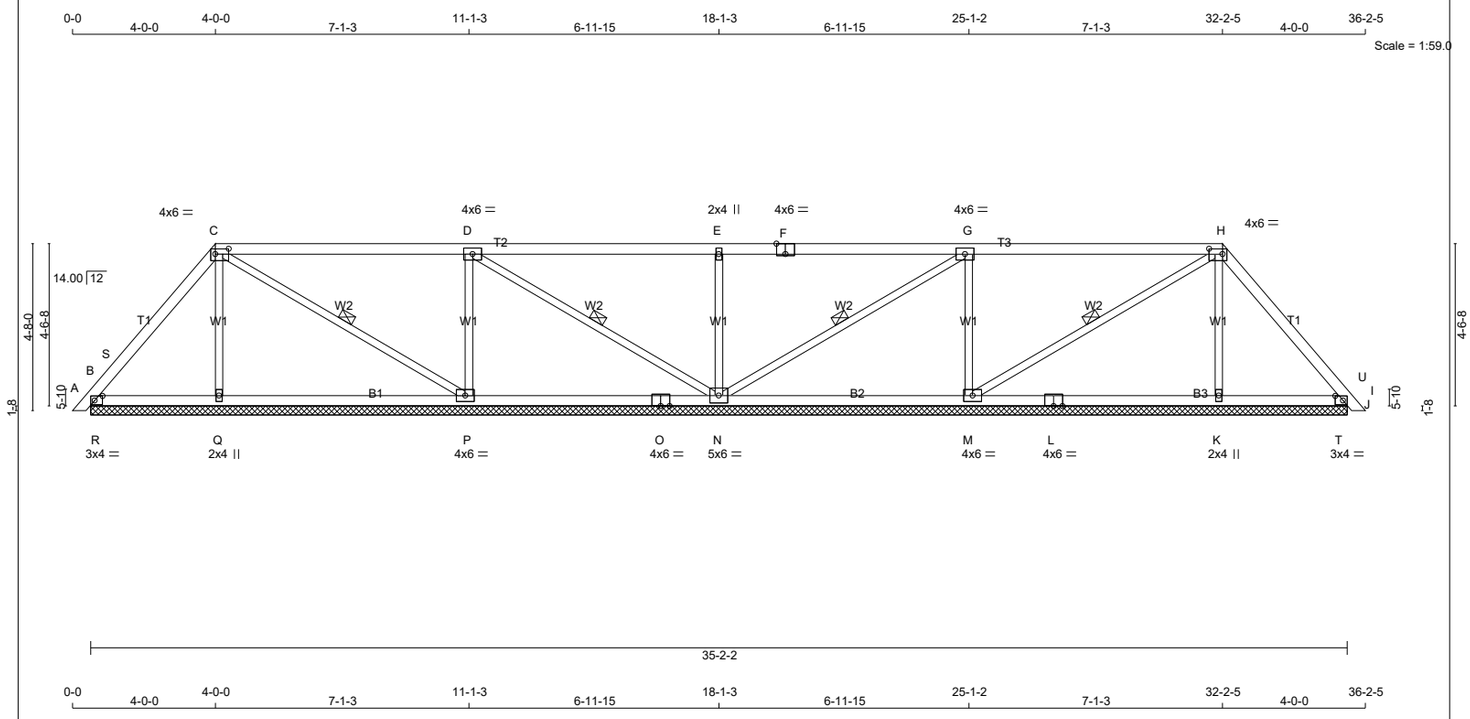


TOTAL WEIGHT = 128 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x4 | DRY | No.2 | SPF |
| C - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| H - J | 2x4 | DRY | No.2 | SPF |
| B - O | 2x4 | DRY | No.2 | SPF |
| O - L | 2x4 | DRY | No.2 | SPF |
| L - I | 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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TMW+w | MT20 | 2.0 | 4.0 | | |
| F | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| I | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |
| L | BS-t | MT20 | 4.0 | 6.0 | | |
| M | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| N | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| O | BS-t | MT20 | 4.0 | 6.0 | | |
| P | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| Q | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 297 | 0 | 297 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-0-8 |
| Q | 326 | 0 | 326 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-0-8 |
| P | 727 | 0 | 727 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-0-8 |
| N | 757 | 0 | 757 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-0-8 |
| M | 727 | 0 | 727 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-0-8 |
| K | 326 | 0 | 326 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-0-8 |
| I | 297 | 0 | 297 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-0-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 207 | 151 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 57 / 0 | 0 / 0 |
| Q | 237 | 116 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 122 / 0 | 0 / 0 |
| P | 517 | 319 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 198 / 0 | 0 / 0 |
| N | 538 | 339 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 199 / 0 | 0 / 0 |
| M | 517 | 319 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 198 / 0 | 0 / 0 |
| K | 237 | 116 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 122 / 0 | 0 / 0 |
| I | 207 | 151 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 57 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, Q, P, N, M, K, I

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF C-P, D-N, G-N, H-M.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- S | 0 / 86 | -78.0 | -78.0 | 0.09 (1) | 10.00 | |
| S- C | -161 / 0 | -78.0 | -78.0 | 0.11 (1) | 6.25 | |
| C- D | -41 / 0 | -78.0 | -78.0 | 0.57 (1) | 6.25 | |
| D- E | 0 / 62 | -78.0 | -78.0 | 0.58 (1) | 10.00 | |
| E- F | 0 / 62 | -78.0 | -78.0 | 0.58 (1) | 10.00 | |
| F- G | 0 / 62 | -78.0 | -78.0 | 0.58 (1) | 10.00 | |
| G- H | -41 / 0 | -78.0 | -78.0 | 0.57 (1) | 6.25 | |
| H- U | -161 / 0 | -78.0 | -78.0 | 0.11 (1) | 6.25 | |
| U- I | 0 / 86 | -78.0 | -78.0 | 0.09 (1) | 10.00 | |
| I- J | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- R | 0 / 96 | -18.5 | -18.5 | 0.11 (1) | 10.00 | |
| R- Q | 0 / 96 | -18.5 | -18.5 | 0.15 (4) | 10.00 | |
| Q- P | 0 / 91 | -18.5 | -18.5 | 0.19 (4) | 10.00 | |
| P- O | 0 / 41 | -18.5 | -18.5 | 0.19 (4) | 10.00 | |
| O- N | 0 / 41 | -18.5 | -18.5 | 0.19 (4) | 10.00 | |
| N- M | 0 / 41 | -18.5 | -18.5 | 0.19 (4) | 10.00 | |
| M- L | 0 / 91 | -18.5 | -18.5 | 0.19 (4) | 10.00 | |
| L- K | 0 / 91 | -18.5 | -18.5 | 0.19 (4) | 10.00 | |
| K- T | 0 / 96 | -18.5 | -18.5 | 0.15 (4) | 10.00 | |
| T- I | 0 / 96 | -18.5 | -18.5 | 0.11 (1) | 10.00 | |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| Q- C | -188 / 0 | 0.06 (1) |
| C- P | -58 / 0 | 0.03 (1) |
| P- D | -567 / 0 | 0.17 (1) |
| D- N | -121 / 0 | 0.05 (1) |
| N- E | -503 / 0 | 0.15 (1) |
| N- G | -121 / 0 | 0.05 (1) |
| M- G | -567 / 0 | 0.17 (1) |
| M- H | -58 / 0 | 0.03 (1) |
| K- H | -188 / 0 | 0.06 (1) |
| R- S | -420 / 0 | 0.00 (1) |
| T- U | -420 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.58/1.00 (E-G:1) , BC=0.19/1.00 (P-Q:4) , WB=0.17/1.00 (D-P:1) , SSI=0.32/1.00 (B-R: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.64 (N) (INPUT = 0.90 )
JSI METAL= 0.13 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | P06D | | 1 | TRUSS DESC. JT 45147 | E22052081 |

Alpha Roof Truss, Maple

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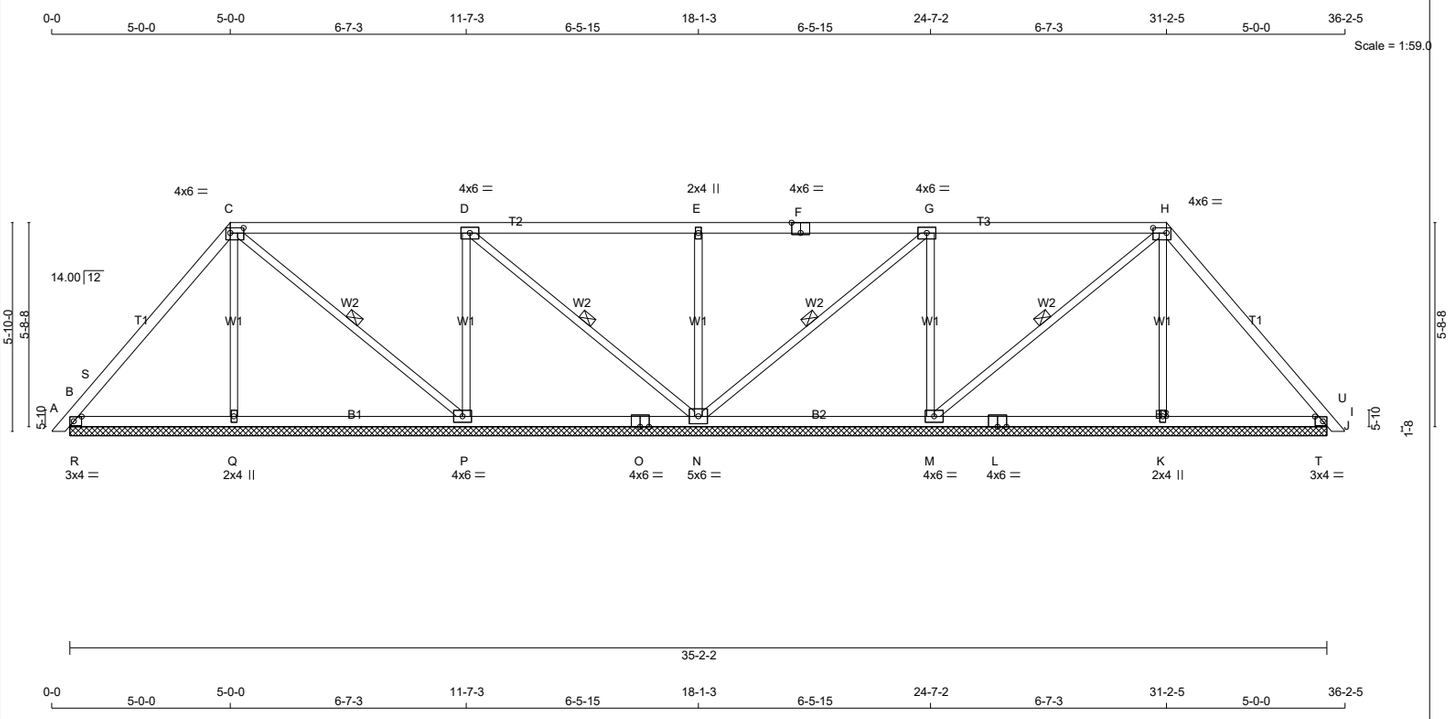


TOTAL WEIGHT = 135 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x4 | DRY | No.2 | SPF |
| C - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| H - J | 2x4 | DRY | No.2 | SPF |
| B - O | 2x4 | DRY | No.2 | SPF |
| O - L | 2x4 | DRY | No.2 | SPF |
| L - I | 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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TMW+w | MT20 | 2.0 | 4.0 | | |
| F | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| I | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |
| L | BS-t | MT20 | 4.0 | 6.0 | | |
| M | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| N | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| O | BS-t | MT20 | 4.0 | 6.0 | | |
| P | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| Q | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 382 | 0 | 382 | 0 | 0 | 35-2-2 ( 9-2-10 ) | 1-8 |
| Q | 299 | 0 | 299 | 0 | 0 | 35-2-2 ( 9-2-10 ) | 1-8 |
| P | 644 | 0 | 644 | 0 | 0 | 35-2-2 ( 9-2-10 ) | 1-8 |
| N | 804 | 0 | 804 | 0 | 0 | 35-2-2 ( 9-2-10 ) | 1-8 |
| M | 644 | 0 | 644 | 0 | 0 | 35-2-2 ( 9-2-10 ) | 1-8 |
| K | 299 | 0 | 299 | 0 | 0 | 35-2-2 ( 9-2-10 ) | 1-8 |
| I | 382 | 0 | 382 | 0 | 0 | 35-2-2 ( 9-2-10 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 269 | 186 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 82 / 0 | 0 / 0 |
| Q | 218 | 104 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 114 / 0 | 0 / 0 |
| P | 459 | 280 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 179 / 0 | 0 / 0 |
| N | 569 | 368 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 201 / 0 | 0 / 0 |
| M | 459 | 280 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 179 / 0 | 0 / 0 |
| K | 218 | 104 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 114 / 0 | 0 / 0 |
| I | 269 | 186 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 82 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, Q, P, N, M, K, I

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF C-P, D-N, G-N, H-M.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | 0 / 10 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- S | -2 / 202 | -78.0 | -78.0 | 0.16 (1) | 10.00 | |
| S- C | -212 / 0 | -78.0 | -78.0 | 0.19 (1) | 6.25 | |
| C- D | -61 / 0 | -78.0 | -78.0 | 0.49 (1) | 6.25 | |
| D- E | 0 / 67 | -78.0 | -78.0 | 0.50 (1) | 10.00 | |
| E- F | 0 / 67 | -78.0 | -78.0 | 0.50 (1) | 10.00 | |
| F- G | 0 / 67 | -78.0 | -78.0 | 0.50 (1) | 10.00 | |
| G- H | -61 / 0 | -78.0 | -78.0 | 0.49 (1) | 6.25 | |
| H- U | -212 / 0 | -78.0 | -78.0 | 0.19 (1) | 6.25 | |
| U- I | -2 / 202 | -78.0 | -78.0 | 0.16 (1) | 10.00 | |
| I- J | 0 / 10 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- R | 0 / 127 | -18.5 | -18.5 | 0.17 (1) | 10.00 | |
| R- Q | 0 / 127 | -18.5 | -18.5 | 0.17 (1) | 10.00 | |
| Q- P | 0 / 124 | -18.5 | -18.5 | 0.16 (4) | 10.00 | |
| P- O | 0 / 61 | -18.5 | -18.5 | 0.16 (4) | 10.00 | |
| O- N | 0 / 61 | -18.5 | -18.5 | 0.16 (4) | 10.00 | |
| N- M | 0 / 61 | -18.5 | -18.5 | 0.16 (4) | 10.00 | |
| M- L | 0 / 124 | -18.5 | -18.5 | 0.16 (4) | 10.00 | |
| L- K | 0 / 124 | -18.5 | -18.5 | 0.16 (4) | 10.00 | |
| K- T | 0 / 127 | -18.5 | -18.5 | 0.17 (1) | 10.00 | |
| T- I | 0 / 127 | -18.5 | -18.5 | 0.17 (1) | 10.00 | |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| Q- C | -150 / 0 | 0.07 (1) |
| C- P | -81 / 0 | 0.04 (1) |
| P- D | -477 / 0 | 0.24 (1) |
| D- N | -167 / 0 | 0.08 (1) |
| N- E | -467 / 0 | 0.23 (1) |
| N- G | -167 / 0 | 0.08 (1) |
| M- G | -477 / 0 | 0.24 (1) |
| M- H | -81 / 0 | 0.04 (1) |
| K- H | -150 / 0 | 0.07 (1) |
| R- S | -651 / 0 | 0.00 (1) |
| T- U | -651 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.50/1.00 (D-E:1) , BC=0.17/1.00 (Q-R:1) , WB=0.24/1.00 (D-P:1) , SSI=0.51/1.00 (I-T: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.51 (F) (INPUT = 0.90 )
JSI METAL= 0.22 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | P06E | | 1 | TRUSS DESC. | JT 45147 | E22052082 |

Alpa Roof Truss, Maple

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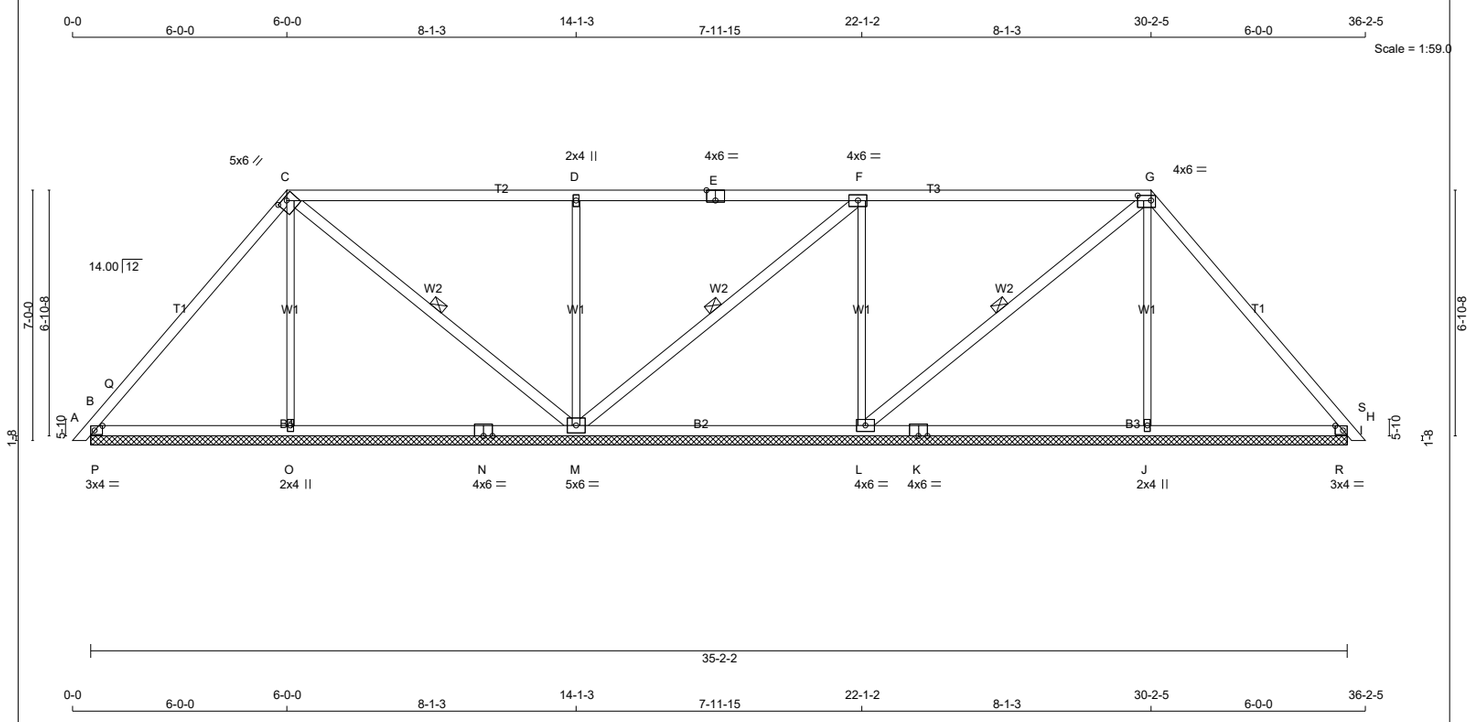


TOTAL WEIGHT = 143 lb

**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 |
| G - I | 2x4 | DRY | No.2 | SPF |
| B - 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 |
| EXCEPT | | | | |
| C - M | 2x4 | DRY | No.2 | SPF |
| M - F | 2x4 | DRY | No.2 | SPF |
| L - G | 2x4 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| B | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-h | MT20 | 5.0 | 6.0 | 1.25 | 3.00 |
| D | TMW+w | MT20 | 2.0 | 4.0 | | |
| E | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| F | TMWW-t | MT20 | 4.0 | 6.0 | | |
| G | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| H | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| J | BMW1+w | MT20 | 2.0 | 4.0 | | |
| K | BS-t | MT20 | 4.0 | 6.0 | | |
| L | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| M | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| N | BS-t | MT20 | 4.0 | 6.0 | | |
| O | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 439 | 0 | 439 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| O | 330 | 0 | 330 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| M | 1073 | 0 | 1073 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| L | 772 | 0 | 772 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| J | 342 | 0 | 342 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| H | 499 | 0 | 499 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 309 | 212 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 97 / 0 | 0 / 0 |
| O | 242 | 108 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 134 / 0 | 0 / 0 |
| M | 759 | 496 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 263 / 0 | 0 / 0 |
| L | 551 | 334 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 217 / 0 | 0 / 0 |
| J | 250 | 115 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 136 / 0 | 0 / 0 |
| H | 351 | 244 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 106 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, O, M, L, J, 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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF C-M, F-M, G-L.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- Q | 0 / 434 | -78.0 | -78.0 | 0.26 (1) | 10.00 |
| Q- C | -233 / 0 | -78.0 | -78.0 | 0.29 (1) | 6.25 |
| C- D | 0 / 20 | -78.0 | -78.0 | 0.69 (1) | 10.00 |
| D- E | 0 / 19 | -78.0 | -78.0 | 0.69 (1) | 10.00 |
| E- F | 0 / 19 | -78.0 | -78.0 | 0.69 (1) | 10.00 |
| F- G | -119 / 0 | -78.0 | -78.0 | 0.70 (1) | 6.25 |
| G- S | -311 / 0 | -78.0 | -78.0 | 0.30 (1) | 6.25 |
| S- H | 0 / 343 | -78.0 | -78.0 | 0.25 (1) | 10.00 |
| H- I | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- P | 0 / 138 | -18.5 | -18.5 | 0.25 (1) | 10.00 |
| P- O | 0 / 138 | -18.5 | -18.5 | 0.25 (1) | 10.00 |
| O- N | 0 / 135 | -18.5 | -18.5 | 0.24 (4) | 10.00 |
| N- M | 0 / 135 | -18.5 | -18.5 | 0.24 (4) | 10.00 |
| M- L | 0 / 120 | -18.5 | -18.5 | 0.24 (4) | 10.00 |
| L- K | 0 / 186 | -18.5 | -18.5 | 0.25 (4) | 10.00 |
| K- J | 0 / 186 | -18.5 | -18.5 | 0.25 (4) | 10.00 |
| J- R | 0 / 188 | -18.5 | -18.5 | 0.26 (1) | 10.00 |
| R- H | 0 / 188 | -18.5 | -18.5 | 0.26 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| O- C | -147 / 0 | 0.12 (1) |
| C- M | -199 / 0 | 0.11 (1) |
| M- D | -690 / 0 | 0.55 (1) |
| M- F | -180 / 0 | 0.10 (1) |
| L- F | -575 / 0 | 0.46 (1) |
| L- G | -84 / 0 | 0.05 (1) |
| J- G | -160 / 0 | 0.13 (1) |
| P- Q | -983 / 0 | 0.00 (1) |
| R- S | -966 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.70/1.00 (F-G:1) , BC=0.26/1.00 (J-R:1) , WB=0.55/1.00 (D-M:1) , SSI=0.77/1.00 (B-P: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (H) (INPUT = 0.90 )
JSI METAL= 0.21 (E) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | P06F | | 1 | TRUSS DESC. JT 45147 | E22052083 |

Alpa Roof Truss, Maple

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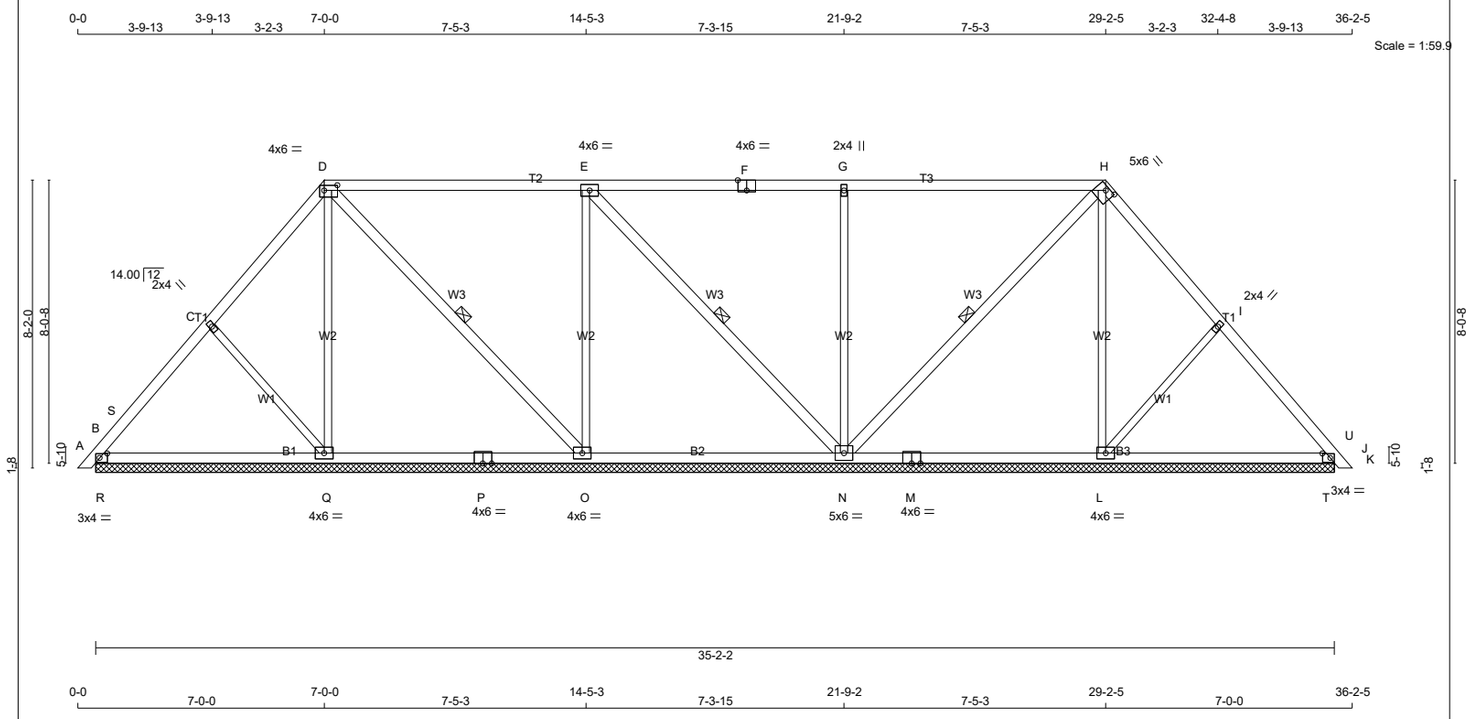


TOTAL WEIGHT = 157 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - D | 2x4 | DRY | No.2 | SPF |
| D - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| H - K | 2x4 | DRY | No.2 | SPF |
| B - P | 2x4 | DRY | No.2 | SPF |
| P - M | 2x4 | DRY | No.2 | SPF |
| M - J | 2x4 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| D - O | 2x4 | DRY | No.2 | SPF |
| E - N | 2x4 | DRY | No.2 | SPF |
| N - H | 2x4 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| B | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C, G, I | | | | | | |
| C | TMW+w | MT20 | 2.0 | 4.0 | | |
| D | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| E | TMWW-t | MT20 | 4.0 | 6.0 | | |
| F | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| H | TTWW-h | MT20 | 5.0 | 6.0 | 1.25 | 3.00 |
| J | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| L, O, Q | | | | | | |
| L | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| M | BS-t | MT20 | 4.0 | 6.0 | | |
| N | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| P | BS-t | MT20 | 4.0 | 6.0 | | |

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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 422 | 0 | 422 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 8 |
| Q | 504 | 0 | 504 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 8 |
| O | 647 | 0 | 647 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 8 |
| N | 1047 | 0 | 1047 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 8 |
| L | 487 | 0 | 487 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 8 |
| J | 349 | 0 | 349 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 298 | 197 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 101 / 0 | 0 / 0 |
| Q | 363 | 199 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 164 / 0 | 0 / 0 |
| O | 462 | 275 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 187 / 0 | 0 / 0 |
| N | 739 | 491 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 248 / 0 | 0 / 0 |
| L | 352 | 190 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 161 / 0 | 0 / 0 |
| J | 248 | 158 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 90 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, Q, O, N, L, J

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF D-O, E-N, H-N.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- S | -488 / 0 | -78.0 | -78.0 | 0.07 (4) | 6.25 |
| S- C | -296 / 0 | -78.0 | -78.0 | 0.14 (1) | 6.25 |
| C- D | -138 / 0 | -78.0 | -78.0 | 0.14 (1) | 6.25 |
| D- E | -37 / 0 | -78.0 | -78.0 | 0.58 (1) | 6.25 |
| E- F | 0 / 109 | -78.0 | -78.0 | 0.60 (1) | 10.00 |
| F- G | 0 / 109 | -78.0 | -78.0 | 0.60 (1) | 10.00 |
| G- H | 0 / 109 | -78.0 | -78.0 | 0.59 (1) | 10.00 |
| H- I | -43 / 0 | -78.0 | -78.0 | 0.14 (1) | 6.25 |
| I- U | -202 / 0 | -78.0 | -78.0 | 0.14 (1) | 6.25 |
| U- J | -386 / 0 | -78.0 | -78.0 | 0.07 (4) | 6.25 |
| J- K | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- R | 0 / 211 | -18.5 | -18.5 | 0.07 (4) | 10.00 |
| R- Q | 0 / 211 | -18.5 | -18.5 | 0.21 (4) | 10.00 |
| Q- P | 0 / 71 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| P- O | 0 / 71 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| O- N | 0 / 38 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| N- M | 0 / 10 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| M- L | 0 / 10 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| L- T | 0 / 151 | -18.5 | -18.5 | 0.21 (4) | 10.00 |
| T- J | 0 / 151 | -18.5 | -18.5 | 0.07 (4) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| C- Q | -207 / 0 | 0.09 (1) |
| Q- D | -209 / 0 | 0.26 (1) |
| D- O | -48 / 0 | 0.03 (1) |
| O- E | -477 / 0 | 0.59 (1) |
| E- N | -214 / 0 | 0.13 (1) |
| N- G | -633 / 0 | 0.78 (1) |
| N- H | -172 / 0 | 0.10 (1) |
| L- H | -191 / 0 | 0.24 (1) |
| L- I | -208 / 0 | 0.09 (1) |
| R- S | 0 / 220 | 0.00 (1) |
| T- U | 0 / 218 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.60/1.00 (E-G:1) , BC=0.21/1.00 (Q-R:4) , WB=0.78/1.00 (G-N:1) , SSI=0.27/1.00 (D-E:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (H) (INPUT = 0.90 )
JSI METAL= 0.14 (N) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | P06G | 1 | 1 | TRUSS DESC. JT 45147 | E22052084 |

Alpa Roof Truss, Maple

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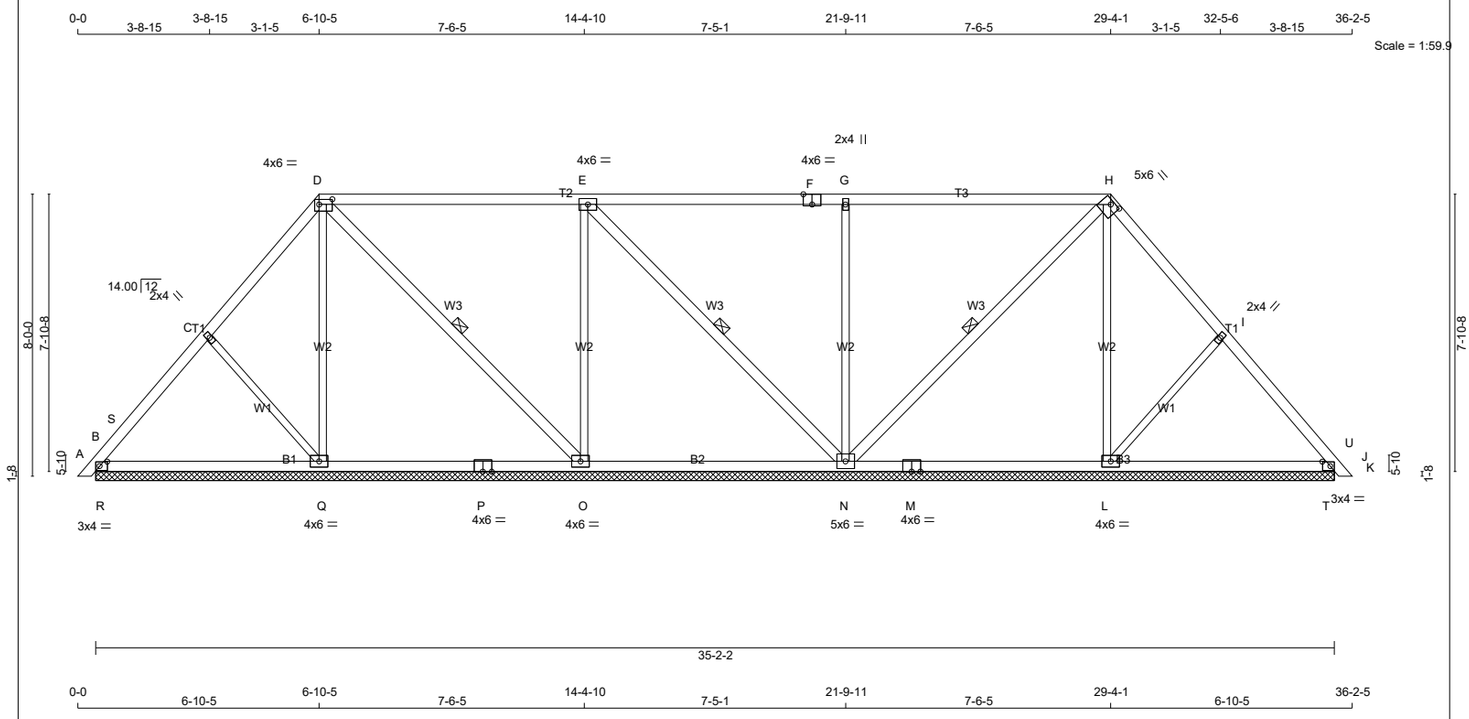





TOTAL WEIGHT = 2 X 156 = 313 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - D | 2x4 | DRY | No.2 | SPF |
| D - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| H - K | 2x4 | DRY | No.2 | SPF |
| B - P | 2x4 | DRY | No.2 | SPF |
| P - M | 2x4 | DRY | No.2 | SPF |
| M - J | 2x4 | DRY | No.2 | SPF |
| ALL WEBS | 2x3 | DRY | No.2 | SPF |
| EXCEPT | | | | |
| D - O | 2x4 | DRY | No.2 | SPF |
| E - N | 2x4 | DRY | No.2 | SPF |
| N - H | 2x4 | DRY | No.2 | SPF |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| B | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C, G, I | | | | | | |
| C | TMW+w | MT20 | 2.0 | 4.0 | | |
| D | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| E | TMWW-t | MT20 | 4.0 | 6.0 | | |
| F | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| H | TTWW-h | MT20 | 5.0 | 6.0 | 1.25 | 3.00 |
| J | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| L, O, Q | | | | | | |
| L | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| M | BS-t | MT20 | 4.0 | 6.0 | | |
| N | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| P | BS-t | MT20 | 4.0 | 6.0 | | |

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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 415 | 0 | 415 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| Q | 503 | 0 | 503 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| O | 660 | 0 | 660 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| N | 1048 | 0 | 1048 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| L | 486 | 0 | 486 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| J | 344 | 0 | 344 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 293 | 194 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 99 / 0 | 0 / 0 |
| Q | 362 | 199 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 164 / 0 | 0 / 0 |
| O | 472 | 281 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 190 / 0 | 0 / 0 |
| N | 740 | 490 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 250 / 0 | 0 / 0 |
| L | 351 | 190 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 161 / 0 | 0 / 0 |
| J | 244 | 156 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 88 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, Q, O, N, L, J

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF D-O, E-N, H-N.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- S | -474 / 0 | -78.0 | -78.0 | 0.07 (4) | 6.25 |
| S- C | -292 / 0 | -78.0 | -78.0 | 0.13 (1) | 6.25 |
| C- D | -137 / 0 | -78.0 | -78.0 | 0.13 (1) | 6.25 |
| D- E | -39 / 0 | -78.0 | -78.0 | 0.60 (1) | 6.25 |
| E- F | 0 / 108 | -78.0 | -78.0 | 0.61 (1) | 10.00 |
| F- G | 0 / 108 | -78.0 | -78.0 | 0.61 (1) | 10.00 |
| G- H | 0 / 108 | -78.0 | -78.0 | 0.61 (1) | 10.00 |
| H- I | -44 / 0 | -78.0 | -78.0 | 0.13 (1) | 6.25 |
| I- U | -200 / 0 | -78.0 | -78.0 | 0.14 (1) | 6.25 |
| U- J | -374 / 0 | -78.0 | -78.0 | 0.07 (4) | 6.25 |
| J- K | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- R | 0 / 208 | -18.5 | -18.5 | 0.07 (4) | 10.00 |
| R- Q | 0 / 208 | -18.5 | -18.5 | 0.21 (4) | 10.00 |
| Q- P | 0 / 71 | -18.5 | -18.5 | 0.21 (4) | 10.00 |
| P- O | 0 / 71 | -18.5 | -18.5 | 0.21 (4) | 10.00 |
| O- N | 0 / 39 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| N- M | 0 / 11 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| M- L | 0 / 11 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| L- T | 0 / 149 | -18.5 | -18.5 | 0.20 (4) | 10.00 |
| T- J | 0 / 149 | -18.5 | -18.5 | 0.06 (4) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| C- Q | -202 / 0 | 0.08 (1) |
| Q- D | -212 / 0 | 0.25 (1) |
| D- O | -45 / 0 | 0.03 (1) |
| O- E | -491 / 0 | 0.57 (1) |
| E- N | -210 / 0 | 0.13 (1) |
| N- G | -641 / 0 | 0.75 (1) |
| N- H | -169 / 0 | 0.10 (1) |
| L- H | -195 / 0 | 0.23 (1) |
| L- I | -203 / 0 | 0.08 (1) |
| R- S | 0 / 205 | 0.00 (1) |
| T- U | 0 / 202 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.61/1.00 (E-G:1) , BC=0.21/1.00 (Q-R:4) , WB=0.75/1.00 (G-N:1) , SSI=0.27/1.00 (D-E:1)

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

COMPANION LIVE LOAD FACTOR = 1.00

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

NAIL VALUES

| PLATE | GRIP(DRY) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) 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 (F) (INPUT = 0.90 )
JSI METAL= 0.36 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | P06H | | 1 | TRUSS DESC. JT 45147 | E22052085 |

Alpha Roof Truss, Maple

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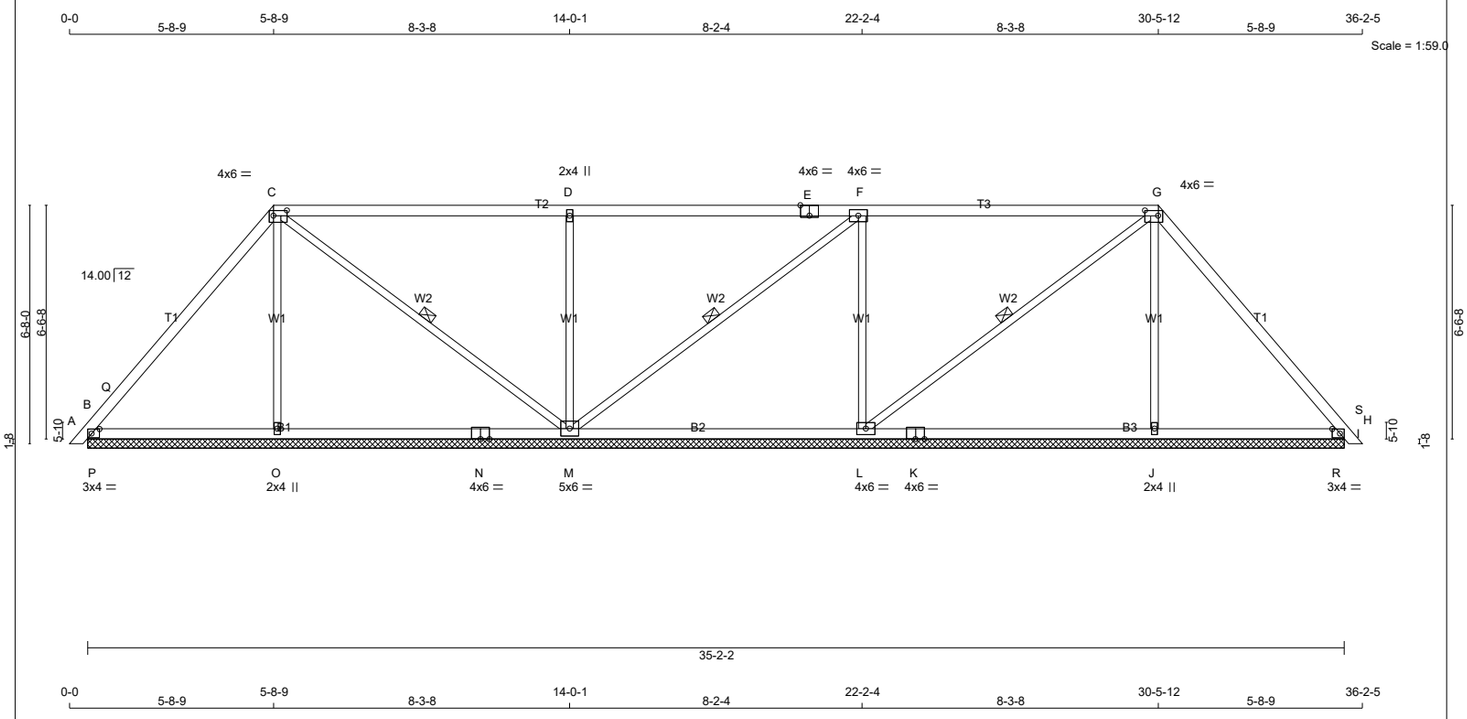


0-0 5-8-9 5-8-9 8-3-8 14-0-1 8-2-4 22-2-4 8-3-8 30-5-12 5-8-9 36-2-5

TOTAL WEIGHT = 132 lb

[M]

**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 |
| G - I | 2x4 | DRY | No.2 | SPF |
| B - 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 |

DRY: SEASONED LUMBER.

**PLATES (table is in inches)**

| JT | TYPE | PLATES | W | LEN | Y | X |
|---|---|---|---|---|---|---|
| B | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMW+w | MT20 | 2.0 | 4.0 | | |
| E | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| F | TMWW-t | MT20 | 4.0 | 6.0 | | |
| G | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| H | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| J | BMW1+w | MT20 | 2.0 | 4.0 | | |
| K | BS-t | MT20 | 4.0 | 6.0 | | |
| L | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| M | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| N | BS-t | MT20 | 4.0 | 6.0 | | |
| O | 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

LICENSED PROFESSIONAL ENGINEER
Y. WIDYA
100225448
06/14/2022
PROVINCE OF ONTARIO

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 414 | 0 | 414 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| O | 365 | 0 | 365 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| M | 1032 | 0 | 1032 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| L | 815 | 0 | 815 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| J | 363 | 0 | 363 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |
| H | 466 | 0 | 466 | 0 | 0 | 35-2-2 ( 12-0-0 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 291 | 202 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 89 / 0 | 0 / 0 |
| O | 267 | 126 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 141 / 0 | 0 / 0 |
| M | 731 | 472 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 259 / 0 | 0 / 0 |
| L | 581 | 355 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 226 / 0 | 0 / 0 |
| J | 265 | 125 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 140 / 0 | 0 / 0 |
| H | 327 | 230 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 97 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, O, M, L, J, 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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF C-M, F-M, G-L.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- Q | 0 / 382 | -78.0 | -78.0 | 0.24 (1) | 10.00 |
| Q- C | -217 / 0 | -78.0 | -78.0 | 0.26 (1) | 6.25 |
| C- D | -4 / 0 | -78.0 | -78.0 | 0.72 (1) | 10.00 |
| D- E | -4 / 0 | -78.0 | -78.0 | 0.72 (1) | 10.00 |
| E- F | -4 / 0 | -78.0 | -78.0 | 0.72 (1) | 10.00 |
| F- G | -110 / 0 | -78.0 | -78.0 | 0.73 (1) | 6.25 |
| G- S | -285 / 0 | -78.0 | -78.0 | 0.26 (1) | 6.25 |
| S- H | 0 / 302 | -78.0 | -78.0 | 0.23 (1) | 10.00 |
| H- I | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- P | 0 / 128 | -18.5 | -18.5 | 0.23 (1) | 10.00 |
| P- O | 0 / 128 | -18.5 | -18.5 | 0.23 (1) | 10.00 |
| O- N | 0 / 125 | -18.5 | -18.5 | 0.26 (4) | 10.00 |
| N- M | 0 / 125 | -18.5 | -18.5 | 0.26 (4) | 10.00 |
| M- L | 0 / 110 | -18.5 | -18.5 | 0.25 (4) | 10.00 |
| L- K | 0 / 169 | -18.5 | -18.5 | 0.26 (4) | 10.00 |
| K- J | 0 / 169 | -18.5 | -18.5 | 0.26 (4) | 10.00 |
| J- R | 0 / 172 | -18.5 | -18.5 | 0.23 (1) | 10.00 |
| R- H | 0 / 172 | -18.5 | -18.5 | 0.23 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| O- C | -186 / 0 | 0.13 (1) |
| C- M | -156 / 0 | 0.12 (1) |
| M- D | -706 / 0 | 0.49 (1) |
| M- F | -138 / 0 | 0.11 (1) |
| L- F | -622 / 0 | 0.44 (1) |
| L- G | -73 / 0 | 0.06 (1) |
| J- G | -185 / 0 | 0.13 (1) |
| P- Q | -893 / 0 | 0.00 (1) |
| R- S | -879 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.73/1.00 (F-G:1) , BC=0.26/1.00 (J-L:4) , WB=0.49/1.00 (D-M:1) , SSI=0.69/1.00 (B-P: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.66 (E) (INPUT = 0.90 )
JSI METAL= 0.25 (E) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | P06I | | 1 | TRUSS DESC. | JT 45147 | E22052086 |

Alpha Roof Truss, Maple

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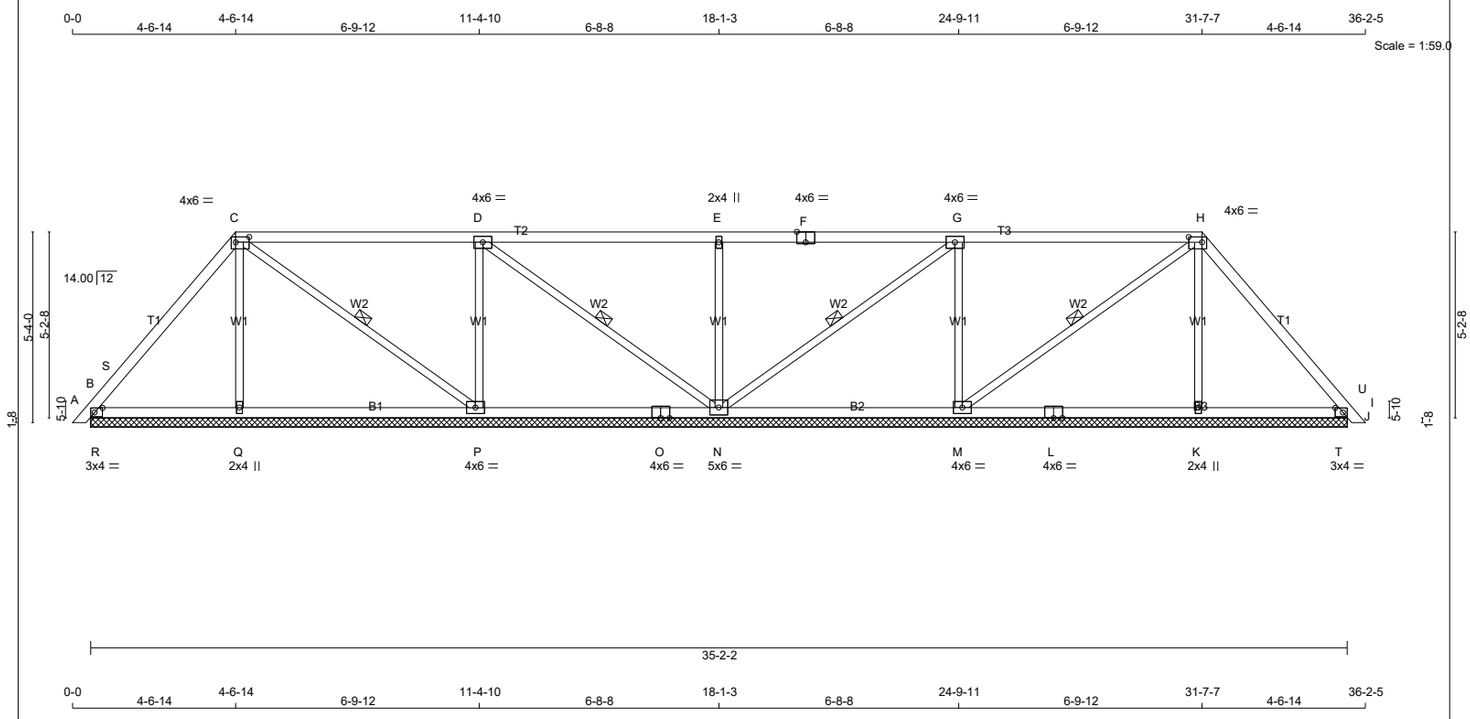


TOTAL WEIGHT = 132 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x4 | DRY | No.2 | SPF |
| C - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| H - J | 2x4 | DRY | No.2 | SPF |
| B - O | 2x4 | DRY | No.2 | SPF |
| O - L | 2x4 | DRY | No.2 | SPF |
| L - I | 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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TMW+w | MT20 | 2.0 | 4.0 | | |
| F | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| I | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |
| L | BS-t | MT20 | 4.0 | 6.0 | | |
| M | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| N | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| O | BS-t | MT20 | 4.0 | 6.0 | | |
| P | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| Q | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 346 | 0 | 346 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| Q | 310 | 0 | 310 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| P | 680 | 0 | 680 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| N | 783 | 0 | 783 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| M | 680 | 0 | 680 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| K | 310 | 0 | 310 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| I | 346 | 0 | 346 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 243 | 171 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 72 / 0 | 0 / 0 |
| Q | 226 | 109 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 117 / 0 | 0 / 0 |
| P | 484 | 297 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 187 / 0 | 0 / 0 |
| N | 555 | 355 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 200 / 0 | 0 / 0 |
| M | 484 | 297 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 187 / 0 | 0 / 0 |
| K | 226 | 109 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 117 / 0 | 0 / 0 |
| I | 243 | 171 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 72 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, Q, P, N, M, K, I

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF C-P, D-N, G-N, H-M.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- S | 0 / 145 | -78.0 | -78.0 | 0.12 (1) | 10.00 |
| S- C | -190 / 0 | -78.0 | -78.0 | 0.16 (1) | 6.25 |
| C- D | -51 / 0 | -78.0 | -78.0 | 0.52 (1) | 6.25 |
| D- E | 0 / 68 | -78.0 | -78.0 | 0.53 (1) | 10.00 |
| E- F | 0 / 68 | -78.0 | -78.0 | 0.53 (1) | 10.00 |
| F- G | 0 / 68 | -78.0 | -78.0 | 0.53 (1) | 10.00 |
| G- H | -51 / 0 | -78.0 | -78.0 | 0.52 (1) | 6.25 |
| H- U | -190 / 0 | -78.0 | -78.0 | 0.16 (1) | 6.25 |
| U- I | 0 / 145 | -78.0 | -78.0 | 0.12 (1) | 10.00 |
| I- J | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- R | 0 / 113 | -18.5 | -18.5 | 0.15 (1) | 10.00 |
| R- Q | 0 / 113 | -18.5 | -18.5 | 0.15 (4) | 10.00 |
| Q- P | 0 / 110 | -18.5 | -18.5 | 0.18 (4) | 10.00 |
| P- O | 0 / 52 | -18.5 | -18.5 | 0.17 (4) | 10.00 |
| O- N | 0 / 52 | -18.5 | -18.5 | 0.17 (4) | 10.00 |
| N- M | 0 / 52 | -18.5 | -18.5 | 0.17 (4) | 10.00 |
| M- L | 0 / 110 | -18.5 | -18.5 | 0.18 (4) | 10.00 |
| L- K | 0 / 110 | -18.5 | -18.5 | 0.18 (4) | 10.00 |
| K- T | 0 / 113 | -18.5 | -18.5 | 0.15 (4) | 10.00 |
| T- I | 0 / 113 | -18.5 | -18.5 | 0.15 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| Q- C | -167 / 0 | 0.07 (1) |
| C- P | -71 / 0 | 0.03 (1) |
| P- D | -516 / 0 | 0.21 (1) |
| D- N | -149 / 0 | 0.07 (1) |
| N- E | -482 / 0 | 0.19 (1) |
| N- G | -149 / 0 | 0.07 (1) |
| M- G | -516 / 0 | 0.21 (1) |
| M- H | -71 / 0 | 0.03 (1) |
| K- H | -167 / 0 | 0.07 (1) |
| R- S | -543 / 0 | 0.00 (1) |
| T- U | -543 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.53/1.00 (D-E:1) , BC=0.18/1.00 (P-Q:4) , WB=0.21/1.00 (D-P:1) , SSI=0.42/1.00 (I-T: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.56 (N) (INPUT = 0.90 )
JSI METAL= 0.20 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | P06J | | 1 | TRUSS DESC. | JT 45147 | E22052087 |

Alpha Roof Truss, Maple

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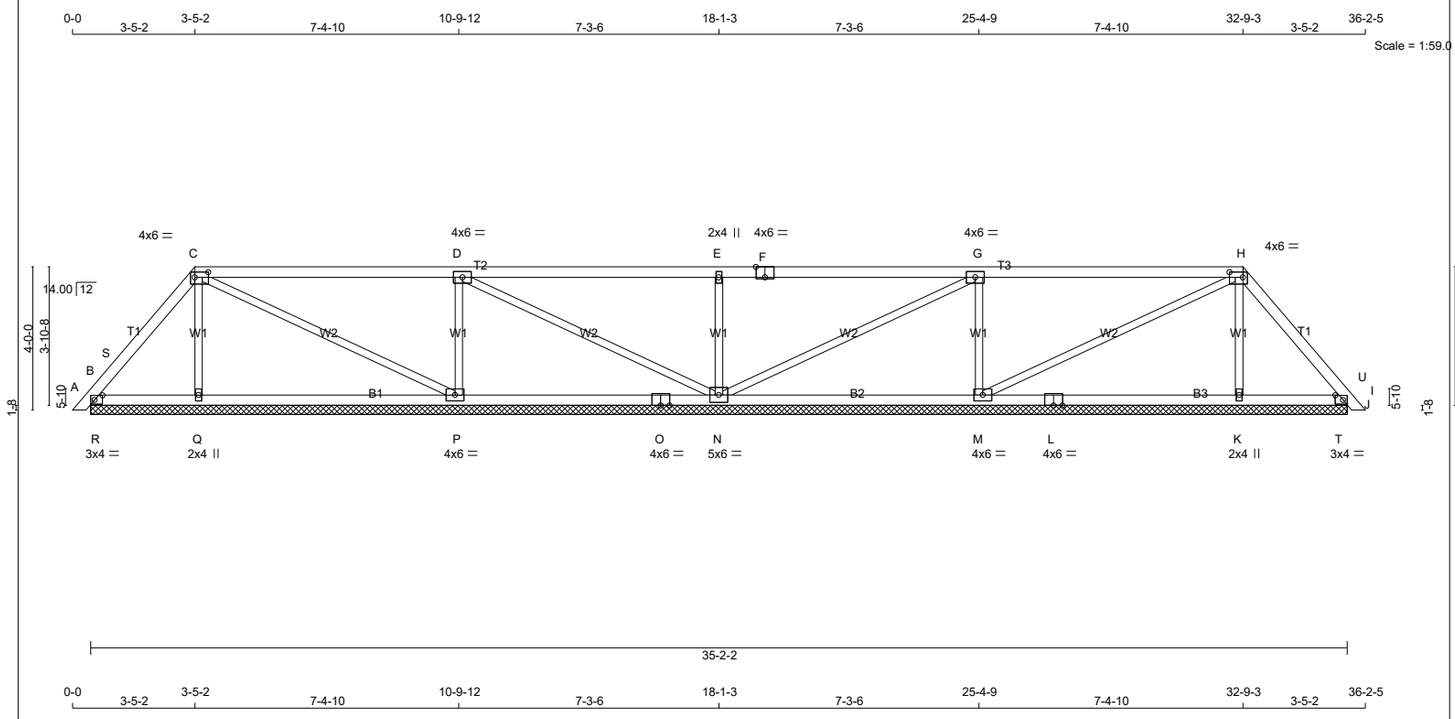





TOTAL WEIGHT = 124 lb [M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x4 | DRY | No.2 | SPF |
| C - F | 2x4 | DRY | No.2 | SPF |
| F - H | 2x4 | DRY | No.2 | SPF |
| H - J | 2x4 | DRY | No.2 | SPF |
| B - O | 2x4 | DRY | No.2 | SPF |
| O - L | 2x4 | DRY | No.2 | SPF |
| L - I | 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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TMW+w | MT20 | 2.0 | 4.0 | | |
| F | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| G | TMWW-t | MT20 | 4.0 | 6.0 | | |
| H | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| I | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |
| L | BS-t | MT20 | 4.0 | 6.0 | | |
| M | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| N | BMWWW1-t | MT20 | 5.0 | 6.0 | | |
| O | BS-t | MT20 | 4.0 | 6.0 | | |
| P | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| Q | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 246 | 0 | 246 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| Q | 341 | 0 | 341 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| P | 771 | 0 | 771 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| N | 738 | 0 | 738 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| M | 771 | 0 | 771 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| K | 341 | 0 | 341 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |
| I | 246 | 0 | 246 | 0 | 0 | 35-2-2 ( 8-2-10 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 171 | 130 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 41 / 0 | 0 / 0 |
| Q | 249 | 121 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 127 / 0 | 0 / 0 |
| P | 549 | 341 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 208 / 0 | 0 / 0 |
| N | 525 | 326 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 199 / 0 | 0 / 0 |
| M | 549 | 341 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 208 / 0 | 0 / 0 |
| K | 249 | 121 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 127 / 0 | 0 / 0 |
| I | 171 | 130 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 41 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, Q, P, N, M, K, I

**BRACING**

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

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

**LOADING**

TOTAL LOAD CASES: (4)

| CHORDS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH | WEBS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | Q- C | -206 / 0 | 0.05 (1) |
| B- S | 0 / 46 | -78.0 | -78.0 | 0.06 (1) | 10.00 | C- P | -46 / 0 | 0.06 (1) |
| S- C | -134 / 0 | -78.0 | -78.0 | 0.07 (1) | 6.25 | P- D | -615 / 0 | 0.14 (1) |
| C- D | -32 / 0 | -78.0 | -78.0 | 0.62 (1) | 6.25 | D- N | -91 / 0 | 0.13 (1) |
| D- E | 0 / 50 | -78.0 | -78.0 | 0.62 (1) | 10.00 | N- E | -524 / 0 | 0.12 (1) |
| E- F | 0 / 50 | -78.0 | -78.0 | 0.62 (1) | 10.00 | N- G | -91 / 0 | 0.13 (1) |
| F- G | 0 / 50 | -78.0 | -78.0 | 0.62 (1) | 10.00 | M- G | -615 / 0 | 0.14 (1) |
| G- H | -32 / 0 | -78.0 | -78.0 | 0.62 (1) | 6.25 | M- H | -46 / 0 | 0.06 (1) |
| H- U | -134 / 0 | -78.0 | -78.0 | 0.07 (1) | 6.25 | K- H | -206 / 0 | 0.05 (1) |
| U- I | 0 / 46 | -78.0 | -78.0 | 0.06 (1) | 10.00 | R- S | -321 / 0 | 0.00 (1) |
| I- J | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | T- U | -321 / 0 | 0.00 (1) |
| B- R | 0 / 79 | -18.5 | -18.5 | 0.09 (1) | 10.00 | | | |
| R- Q | 0 / 79 | -18.5 | -18.5 | 0.15 (4) | 10.00 | | | |
| Q- P | 0 / 73 | -18.5 | -18.5 | 0.21 (4) | 10.00 | | | |
| P- O | 0 / 32 | -18.5 | -18.5 | 0.20 (4) | 10.00 | | | |
| O- N | 0 / 32 | -18.5 | -18.5 | 0.20 (4) | 10.00 | | | |
| N- M | 0 / 32 | -18.5 | -18.5 | 0.20 (4) | 10.00 | | | |
| M- L | 0 / 73 | -18.5 | -18.5 | 0.21 (4) | 10.00 | | | |
| L- K | 0 / 73 | -18.5 | -18.5 | 0.21 (4) | 10.00 | | | |
| K- T | 0 / 79 | -18.5 | -18.5 | 0.15 (4) | 10.00 | | | |
| T- I | 0 / 79 | -18.5 | -18.5 | 0.09 (1) | 10.00 | | | |

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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

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

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

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

CSI: TC=0.62/1.00 (E-G:1) , BC=0.21/1.00 (K-M:4) , WB=0.14/1.00 (G-M:1) , SSI=0.27/1.00 (G-H: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.75 (N) (INPUT = 0.90 )
JSI METAL= 0.11 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | P06K | | 1 | TRUSS DESC. | JT 45147 | E22052088 |

Alpa Roof Truss, Maple

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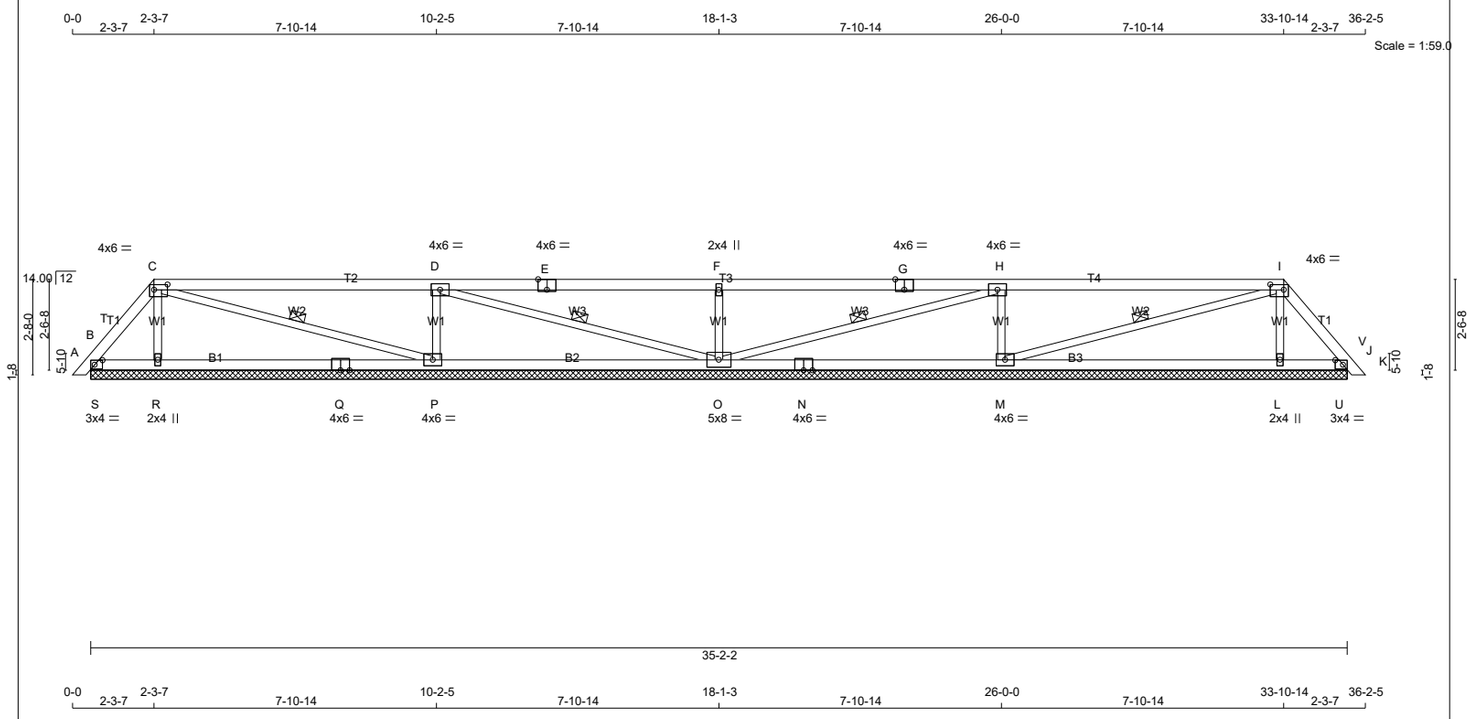


0-0 2-3-7 2-3-7 7-10-14 10-2-5 7-10-14 18-1-3 7-10-14 26-0-0 7-10-14 33-10-14 2-3-7 36-2-5

TOTAL WEIGHT = 118 lb

**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 |
| G - I | 2x4 | DRY | No.2 | SPF |
| I - K | 2x4 | DRY | No.2 | SPF |
| B - Q | 2x4 | DRY | No.2 | SPF |
| Q - N | 2x4 | DRY | No.2 | SPF |
| N - J | 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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMWW-t | MT20 | 4.0 | 6.0 | | |
| E | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| F | TMW+w | MT20 | 2.0 | 4.0 | | |
| G | TS-t | MT20 | 4.0 | 6.0 | Edge | 3.00 |
| H | TMWW-t | MT20 | 4.0 | 6.0 | | |
| I | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| J | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| L | BMW1+w | MT20 | 2.0 | 4.0 | | |
| M | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| N | BS-t | MT20 | 4.0 | 6.0 | | |
| O | BMWWW1-t | MT20 | 5.0 | 8.0 | | |
| P | BMWW1-t | MT20 | 4.0 | 6.0 | | |
| Q | BS-t | MT20 | 4.0 | 6.0 | | |
| R | 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

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 139 | 0 | 139 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| R | 371 | 0 | 371 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| P | 849 | 0 | 849 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| O | 739 | 0 | 739 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| M | 849 | 0 | 849 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| L | 371 | 0 | 371 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |
| J | 139 | 0 | 139 | 0 | 0 | 35-2-2 ( 15-2-9 ) | 1-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 93 | 90 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 3 / 0 | 0 / 0 |
| R | 271 | 128 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 143 / 0 | 0 / 0 |
| P | 603 | 377 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 226 / 0 | 0 / 0 |
| O | 527 | 320 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 207 / 0 | 0 / 0 |
| M | 603 | 377 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 226 / 0 | 0 / 0 |
| L | 271 | 128 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 143 / 0 | 0 / 0 |
| J | 93 | 90 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 3 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, R, P, O, M, L, J

**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.

1 LATERAL BRACE(S) AT 1/ 2 LENGTH OF C-P, D-O, H-O, I-M.

**LOADING**

TOTAL LOAD CASES: (4)

CHORDS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD (PLF) FROM | TO | LC1 | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- T | 0 / 65 | -78.0 | -78.0 | 0.05 (4) | 10.00 | |
| T- C | -88 / 0 | -78.0 | -78.0 | 0.03 (4) | 6.25 | |
| C- D | -16 / 0 | -78.0 | -78.0 | 0.71 (1) | 6.25 | |
| D- E | 0 / 20 | -78.0 | -78.0 | 0.71 (1) | 10.00 | |
| E- F | 0 / 20 | -78.0 | -78.0 | 0.71 (1) | 10.00 | |
| F- G | 0 / 20 | -78.0 | -78.0 | 0.71 (1) | 10.00 | |
| G- H | 0 / 20 | -78.0 | -78.0 | 0.71 (1) | 10.00 | |
| H- I | -16 / 0 | -78.0 | -78.0 | 0.71 (1) | 6.25 | |
| I- V | -88 / 0 | -78.0 | -78.0 | 0.03 (4) | 6.25 | |
| V- J | 0 / 65 | -78.0 | -78.0 | 0.05 (4) | 10.00 | |
| J- K | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | |
| B- S | 0 / 50 | -18.5 | -18.5 | 0.04 (1) | 10.00 | |
| S- R | 0 / 50 | -18.5 | -18.5 | 0.18 (4) | 10.00 | |
| R- Q | 0 / 39 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| Q- P | 0 / 39 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| P- O | 0 / 16 | -18.5 | -18.5 | 0.23 (4) | 10.00 | |
| O- N | 0 / 16 | -18.5 | -18.5 | 0.23 (4) | 10.00 | |
| N- M | 0 / 16 | -18.5 | -18.5 | 0.23 (4) | 10.00 | |
| M- L | 0 / 39 | -18.5 | -18.5 | 0.24 (4) | 10.00 | |
| L- U | 0 / 50 | -18.5 | -18.5 | 0.18 (4) | 10.00 | |
| U- J | 0 / 50 | -18.5 | -18.5 | 0.04 (1) | 10.00 | |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| R- C | -225 / 0 | 0.04 (1) |
| C- P | -23 / 0 | 0.01 (1) |
| P- D | -694 / 0 | 0.11 (1) |
| D- O | -38 / 0 | 0.02 (1) |
| O- F | -573 / 0 | 0.09 (1) |
| O- H | -38 / 0 | 0.02 (1) |
| M- H | -694 / 0 | 0.11 (1) |
| M- I | -23 / 0 | 0.01 (1) |
| L- I | -225 / 0 | 0.04 (1) |
| S- T | -193 / 0 | 0.00 (1) |
| U- V | -193 / 0 | 0.00 (1) |

[M]

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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

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

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

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

CSI: TC=0.71/1.00 (F-H:1) , BC=0.24/1.00 (L-M:4) , WB=0.11/1.00 (H-M:1) , SSI=0.29/1.00 (H-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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.74 (I) (INPUT = 0.90 )
JSI METAL= 0.22 (E) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | P13A | | 1 | TRUSS DESC. | JT 45147 | E22052089 |

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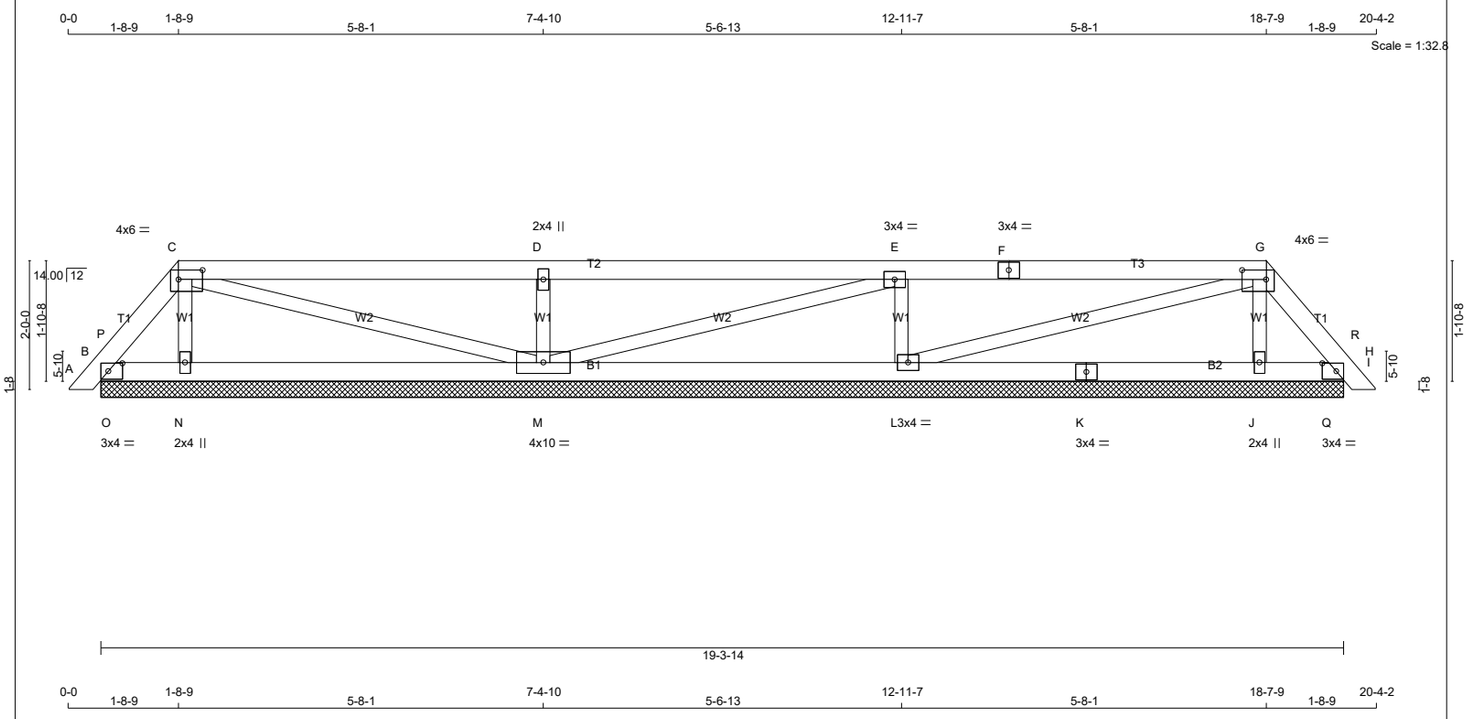


0-0 1-8-9 1-8-9 5-8-1 7-4-10 5-6-13 12-11-7 5-8-1 18-7-9 1-8-9 20-4-2

TOTAL WEIGHT = 65 lb

[M]

**LUMBER**

N. L. G. A. RULES

| CHORDS | SIZE | | LUMBER | DESCR. |
|---|---|---|---|---|
| A - C | 2x4 | DRY | No.2 | SPF |
| C - F | 2x4 | DRY | No.2 | SPF |
| F - G | 2x4 | DRY | No.2 | SPF |
| G - I | 2x4 | DRY | No.2 | SPF |
| B - K | 2x4 | DRY | No.2 | SPF |
| K - H | 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-I | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMW+w | MT20 | 2.0 | 4.0 | | |
| E | TMWW-t | MT20 | 3.0 | 4.0 | | |
| F | TS-t | MT20 | 3.0 | 4.0 | | |
| G | TTWW-I | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| H | TMB1-I | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| J | BMW1+w | MT20 | 2.0 | 4.0 | | |
| K | BS-t | MT20 | 3.0 | 4.0 | | |
| L | BMWW1-t | MT20 | 3.0 | 4.0 | | |
| M | BMWWW1-t | MT20 | 4.0 | 10.0 | | |
| N | BMW1+w | 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**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 104 | 0 | 104 | 0 | 0 | 19-3-14 ( 4-0-0 ) | 1-0-8 |
| N | 268 | 0 | 268 | 0 | 0 | 19-3-14 ( 4-0-0 ) | 1-0-8 |
| M | 600 | 0 | 600 | 0 | 0 | 19-3-14 ( 4-0-0 ) | 1-0-8 |
| L | 576 | 0 | 576 | 0 | 0 | 19-3-14 ( 4-0-0 ) | 1-0-8 |
| J | 258 | 0 | 258 | 0 | 0 | 19-3-14 ( 4-0-0 ) | 1-0-8 |
| H | 119 | 0 | 119 | 0 | 0 | 19-3-14 ( 4-0-0 ) | 1-0-8 |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 70 | 67 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 2 / 0 | 0 / 0 |
| N | 196 | 93 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 103 / 0 | 0 / 0 |
| M | 427 | 267 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 160 / 0 | 0 / 0 |
| L | 410 | 254 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 156 / 0 | 0 / 0 |
| J | 189 | 87 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 101 / 0 | 0 / 0 |
| H | 80 | 76 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 5 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, N, M, L, J, 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

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | FACTORED VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 10 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- P | -13 / 30 | -78.0 | -78.0 | 0.02 (4) | 6.25 |
| P- C | -62 / 0 | -78.0 | -78.0 | 0.02 (4) | 6.25 |
| C- D | -5 / 0 | -78.0 | -78.0 | 0.34 (1) | 10.00 |
| D- E | -6 / 0 | -78.0 | -78.0 | 0.34 (1) | 10.00 |
| E- F | -39 / 0 | -78.0 | -78.0 | 0.34 (1) | 6.25 |
| F- G | -39 / 0 | -78.0 | -78.0 | 0.34 (1) | 6.25 |
| G- R | -81 / 0 | -78.0 | -78.0 | 0.02 (4) | 6.25 |
| R- H | -35 / 25 | -78.0 | -78.0 | 0.02 (4) | 6.25 |
| H- I | 0 / 10 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- O | 0 / 34 | -18.5 | -18.5 | 0.02 (1) | 10.00 |
| O- N | 0 / 34 | -18.5 | -18.5 | 0.09 (4) | 10.00 |
| N- M | 0 / 23 | -18.5 | -18.5 | 0.12 (4) | 10.00 |
| M- L | 0 / 38 | -18.5 | -18.5 | 0.12 (4) | 10.00 |
| L- K | 0 / 36 | -18.5 | -18.5 | 0.12 (4) | 10.00 |
| K- J | 0 / 36 | -18.5 | -18.5 | 0.12 (4) | 10.00 |
| J- Q | 0 / 46 | -18.5 | -18.5 | 0.09 (4) | 10.00 |
| Q- H | 0 / 46 | -18.5 | -18.5 | 0.02 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| N- C | -161 / 0 | 0.02 (1) |
| C- M | -19 / 0 | 0.01 (1) |
| M- D | -482 / 0 | 0.07 (1) |
| M- E | -34 / 0 | 0.02 (1) |
| L- E | -472 / 0 | 0.07 (1) |
| L- G | 0 / 2 | 0.00 (4) |
| J- G | -152 / 0 | 0.02 (1) |
| O- P | -104 / 0 | 0.00 (1) |
| Q- R | -100 / 0 | 0.00 (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/C**

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

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

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

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

CSI: TC=0.34/1.00 (E-G:1) , BC=0.12/1.00 (L-M:4) , WB=0.07/1.00 (D-M:1) , SSI=0.21/1.00 (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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.85 (L) (INPUT = 0.90 )
JSI METAL= 0.22 (F) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | | DRWG NO. |
|---|---|---|---|---|---|---|
| 343290 | P13B | | 1 | TRUSS DESC. | JT 45147 | E22052090 |

Alpa Roof Truss, Maple

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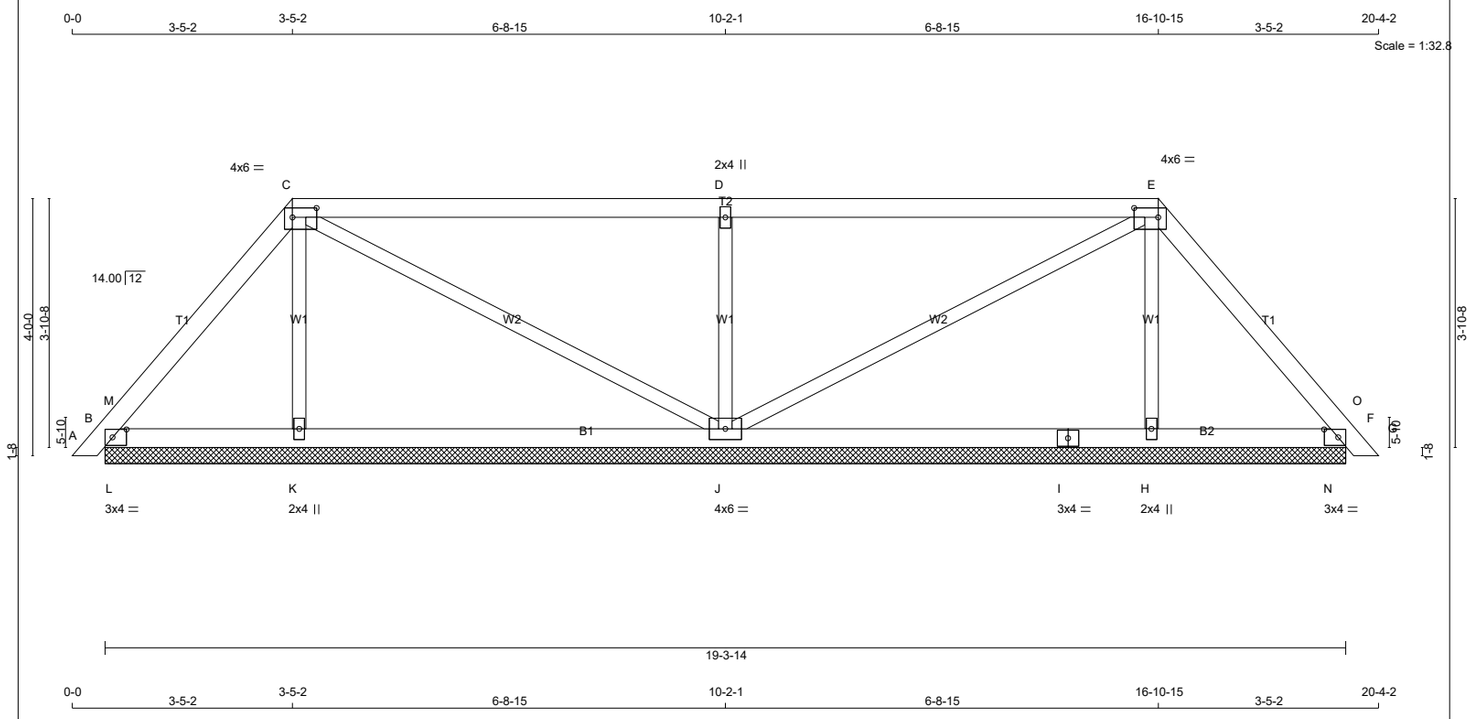


0-0 3-5-2 3-5-2 6-8-15 10-2-1 6-8-15 16-10-15 3-5-2 20-4-2

TOTAL WEIGHT = 69 lb

**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-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| C | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMW+w | MT20 | 2.0 | 4.0 | | |
| E | TTWW-l | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| F | TMB1-l | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| H | BMW1+w | MT20 | 2.0 | 4.0 | | |
| I | BS-t | MT20 | 3.0 | 4.0 | | |
| J | BMWWW1-t | MT20 | 4.0 | 6.0 | | |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |

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

LICENSED PROFESSIONAL ENGINEER
Y. WIDYA
100225448
06/14/2022
PROVINCE OF ONTARIO

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 243 | 0 | 243 | 0 | 0 | 19-3-14 ( 4-3-14) | |
| K | 305 | 0 | 305 | 0 | 0 | 19-3-14 ( 4-3-14) | |
| J | 830 | 0 | 830 | 0 | 0 | 19-3-14 ( 4-3-14) | |
| H | 305 | 0 | 305 | 0 | 0 | 19-3-14 ( 4-3-14) | |
| F | 243 | 0 | 243 | 0 | 0 | 19-3-14 ( 4-3-14) | |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 169 | 126 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 44 / 0 | 0 / 0 |
| K | 222 | 109 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 114 / 0 | 0 / 0 |
| J | 588 | 376 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 212 / 0 | 0 / 0 |
| H | 222 | 109 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 114 / 0 | 0 / 0 |
| F | 169 | 126 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 44 / 0 | 0 / 0 |

BEARING MATERIAL TO BE SPF NO.2 OR BETTER AT JOINT(S) B, K, J, 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 MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH | WEBS MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | K- C | -180 / 0 | 0.04 (1) |
| B- M | 0 / 44 | -78.0 | -78.0 | 0.06 (1) | 10.00 | C- J | -50 / 0 | 0.06 (1) |
| M- C | -125 / 0 | -78.0 | -78.0 | 0.08 (1) | 6.25 | J- D | -657 / 0 | 0.15 (1) |
| C- D | -24 / 0 | -78.0 | -78.0 | 0.60 (1) | 6.25 | J- E | -50 / 0 | 0.06 (1) |
| D- E | -24 / 0 | -78.0 | -78.0 | 0.60 (1) | 6.25 | H- E | -180 / 0 | 0.04 (1) |
| E- O | -125 / 0 | -78.0 | -78.0 | 0.08 (1) | 6.25 | L- M | -309 / 0 | 0.00 (1) |
| O- F | 0 / 44 | -78.0 | -78.0 | 0.06 (1) | 10.00 | N- O | -309 / 0 | 0.00 (1) |
| F- G | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 | | | |
| B- L | 0 / 74 | -18.5 | -18.5 | 0.08 (1) | 10.00 | | | |
| L- K | 0 / 74 | -18.5 | -18.5 | 0.13 (4) | 10.00 | | | |
| K- J | 0 / 69 | -18.5 | -18.5 | 0.18 (4) | 10.00 | | | |
| J- I | 0 / 69 | -18.5 | -18.5 | 0.18 (4) | 10.00 | | | |
| I- H | 0 / 69 | -18.5 | -18.5 | 0.18 (4) | 10.00 | | | |
| H- N | 0 / 74 | -18.5 | -18.5 | 0.13 (4) | 10.00 | | | |
| N- F | 0 / 74 | -18.5 | -18.5 | 0.08 (1) | 10.00 | | | |

[M]

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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

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

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

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

CSI: TC=0.60/1.00 (C-D:1) , BC=0.18/1.00 (J-K:4) , WB=0.15/1.00 (D-J:1) , SSI=0.26/1.00 (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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.70 (J) (INPUT = 0.90 )
JSI METAL= 0.14 (D) (INPUT = 1.00 )

| JOB NAME | TRUSS NAME | QUANTITY | PLY | JOB DESC. | DRWG NO. |
|---|---|---|---|---|---|
| 343290 | P13C | | 1 | TRUSS DESC. JT 45147 | E22052091 |

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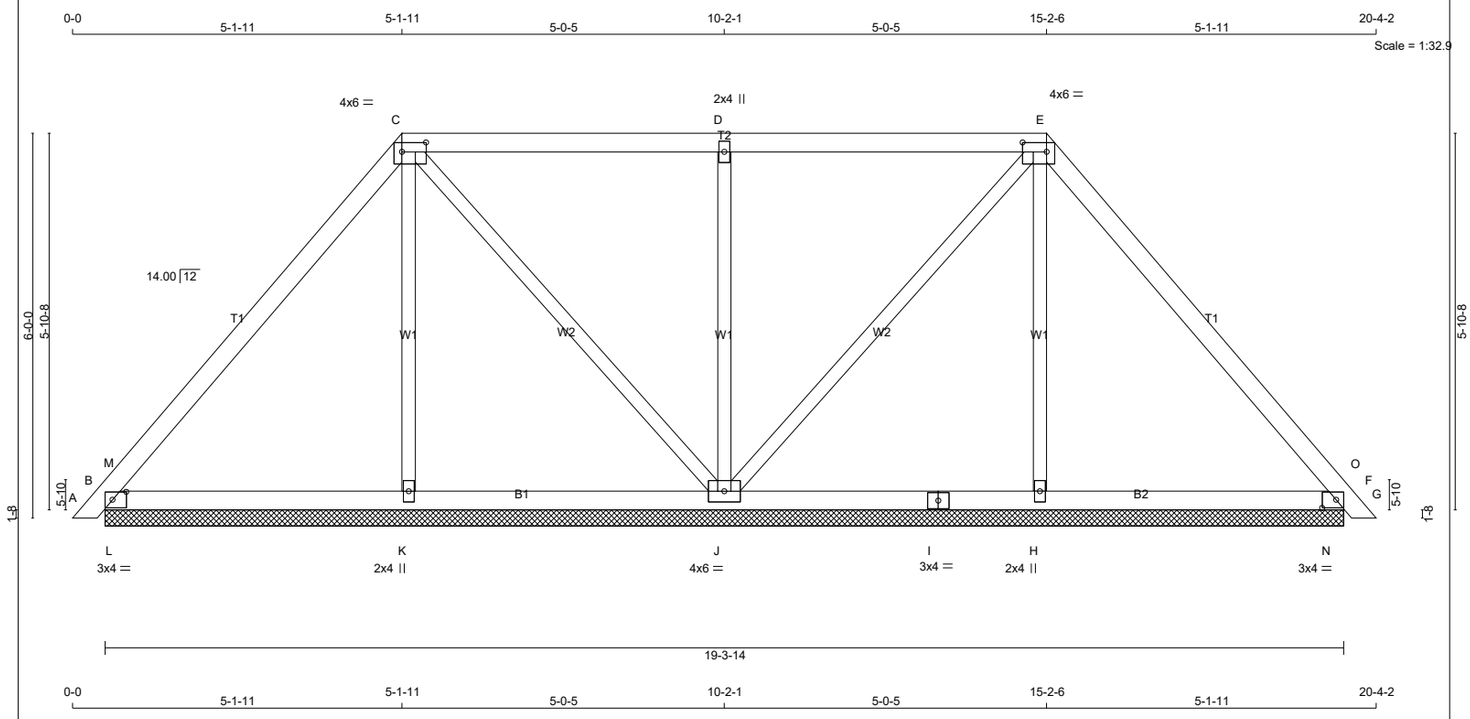



TOTAL WEIGHT = 76 lb

**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-I | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| D | TMW+w | MT20 | 2.0 | 4.0 | | |
| E | TTWW-I | MT20 | 4.0 | 6.0 | 1.75 | 4.50 |
| F | TMB1-I | MT20 | 3.0 | 4.0 | 1.50 | 2.50 |
| H | BMW1+w | MT20 | 2.0 | 4.0 | | |
| I | BS-t | MT20 | 3.0 | 4.0 | | |
| J | BMWWW1-t | MT20 | 4.0 | 6.0 | | |
| K | BMW1+w | MT20 | 2.0 | 4.0 | | |

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

**BEARINGS**

| JT | FACTORED GROSS REACTION VERT | HORZ | MAXIMUM FACTORED GROSS REACTION DOWN | HORZ | UPLIFT | INPUT BRG IN-SX | REQRD BRG IN-SX |
|---|---|---|---|---|---|---|---|
| B | 390 | 0 | 390 | 0 | 0 | 19-3-14 ( 6-3-14) | |
| K | 241 | 0 | 241 | 0 | 0 | 19-3-14 ( 6-3-14) | |
| J | 664 | 0 | 664 | 0 | 0 | 19-3-14 ( 6-3-14) | |
| H | 241 | 0 | 241 | 0 | 0 | 19-3-14 ( 6-3-14) | |
| F | 390 | 0 | 390 | 0 | 0 | 19-3-14 ( 6-3-14) | |

VALUE IN PARENTHESIS INDICATES EFFECTIVE BEARING LENGTH

**UNFACTORED REACTIONS**

| JT | 1ST LCASE COMBINED | MAX./MIN. COMPONENT REACTIONS SNOW | LIVE | PERM.LIVE | WIND | DEAD | SOIL |
|---|---|---|---|---|---|---|---|
| B | 275 | 186 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 90 / 0 | 0 / 0 |
| K | 176 | 81 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 95 / 0 | 0 / 0 |
| J | 469 | 311 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 158 / 0 | 0 / 0 |
| H | 176 | 81 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 95 / 0 | 0 / 0 |
| F | 275 | 186 / 0 | 0 / 0 | 0 / 0 | 0 / 0 | 90 / 0 | 0 / 0 |

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

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | VERT. LOAD LC1 (PLF) FROM | TO | MAX CSI (LC) | MAX. UNBRAC LENGTH |
|---|---|---|---|---|---|
| A- B | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- M | -22 / 225 | -78.0 | -78.0 | 0.17 (1) | 6.25 |
| M- C | -211 / 0 | -78.0 | -78.0 | 0.21 (1) | 6.25 |
| C- D | -74 / 0 | -78.0 | -78.0 | 0.33 (1) | 6.25 |
| D- E | -74 / 0 | -78.0 | -78.0 | 0.33 (1) | 6.25 |
| E- O | -211 / 0 | -78.0 | -78.0 | 0.21 (1) | 6.25 |
| O- F | -22 / 225 | -78.0 | -78.0 | 0.17 (1) | 6.25 |
| F- G | 0 / 11 | -78.0 | -78.0 | 0.01 (1) | 10.00 |
| B- L | 0 / 126 | -18.5 | -18.5 | 0.18 (1) | 10.00 |
| L- K | 0 / 126 | -18.5 | -18.5 | 0.18 (1) | 10.00 |
| K- J | 0 / 124 | -18.5 | -18.5 | 0.13 (1) | 10.00 |
| J- I | 0 / 124 | -18.5 | -18.5 | 0.13 (1) | 10.00 |
| I- H | 0 / 124 | -18.5 | -18.5 | 0.13 (1) | 10.00 |
| H- N | 0 / 126 | -18.5 | -18.5 | 0.18 (1) | 10.00 |
| N- F | 0 / 126 | -18.5 | -18.5 | 0.18 (1) | 10.00 |

WEBS

| MEMB. FR-TO | MAX. FACTORED FORCE (LBS) | MAX CSI (LC) |
|---|---|---|
| K- C | -97 / 0 | 0.05 (1) |
| C- J | -74 / 0 | 0.08 (1) |
| J- D | -488 / 0 | 0.26 (1) |
| J- E | -74 / 0 | 0.08 (1) |
| H- E | -97 / 0 | 0.05 (1) |
| L- M | -683 / 0 | 0.00 (1) |
| N- O | -683 / 0 | 0.00 (1) |

[M]

**DESIGN CRITERIA**

SPECIFIED LOADS:

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

**SPACING = 24.0 IN. C/C**

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

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

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

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

CSI: TC=0.33/1.00 (D-E:1) , BC=0.18/1.00 (F-N:1) , WB=0.26/1.00 (D-J:1) , SSI=0.53/1.00 (B-L: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) (PSI) MAX | MIN | SHEAR (PLI) MAX | MIN | SECTION (PLI) MAX | MIN |
|---|---|---|---|---|---|---|
| MT20 | 650 | 371 | 1747 | 788 | 1987 | 1873 |

PLATE PLACEMENT TOL. = 0.250 inches

PLATE ROTATION TOL. = 5.0 Deg.

JSI GRIP= 0.57 (J) (INPUT = 0.90 )
JSI METAL= 0.10 (D) (INPUT = 1.00 )

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

# LGT/MGT/VGT

## Girder Tiedowns

The LGT, MGT and VGT are girder tiedowns for moderate- to high-load applications. The LGT and VGT are also suitable for retrofit applications.

LGT connectors provide a low-profile connection to the studs for easy installation of drywall. Simple to install and can be installed on the inside or outside of the wall.

The variable girder tiedown (VGT) is a higher capacity alternative to the LGT and MGT for girder trusses. It attaches with Strong-Drive® SDS Heavy-Duty Connector screws to the side of truss and features a predeflected crescent washer that allows it to accommodate top chord pitches up to 8:12. The VGT is also available with one flange concealed for attachment to trusses with no overhang.

**Material:** VGT — 7 gauge, LGT2 — 14 gauge, MGT, LGT3, LGT4 — 12 gauge

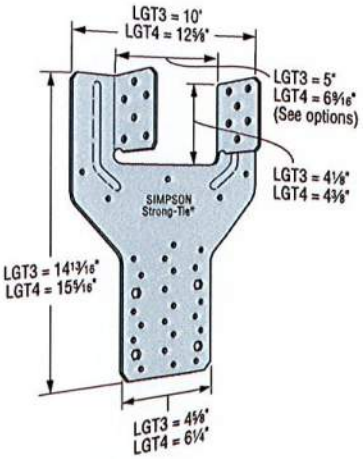
**Finish:** Galvanized

**Installation:**

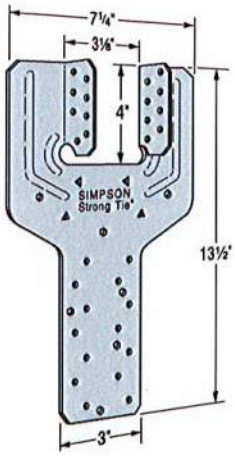
- Before installing fasteners, ensure LGT3-SDS2.5 makes complete contact with bottom of truss.
- Strong-Drive SDS Heavy-Duty Connector screws included with LGT3, LGT4 and VGT series.
- Strong-Drive SDS Heavy-Duty Connector screws driven through truss plates must be approved by the Truss Designer. Predrilling using a 5/32" bit is required.
- VGT — Can be installed on roof pitches up to 8/12 or on a bottom chord designed to transfer the load.
- VGT — Screw holes are configured to allow for double installation on a two-ply (minimum) truss.
- VGT — The product can be installed in a single application or in pairs to achieve a higher uplift capacity.
- VGT — When installed on trusses with no overhangs, specify VGTR/L.
- VGT — Install washer component (provided) so that top of washer is horizontal as well as parallel with top of wall top plate.
- LGT3-SDS2.5 and LGT4-SDS3 — The four large hexagon holes are intended for GFCMU and concrete applications.
- MGT — Install a minimum of (6) 10d nails into the face of roof member that is on same side as MGT base.
- See p. 342 for masonry applications.

**Options:**

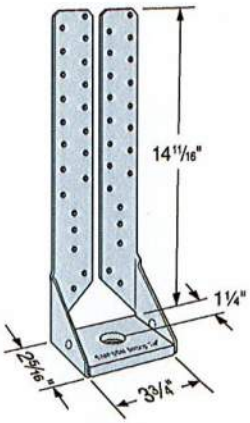
- LGT3 and LGT4 are available with reduced widths of W = 4 13/16" and W = 6 3/8" — order as LGT3N-SDS2.5 and LGT4N-SDS3.



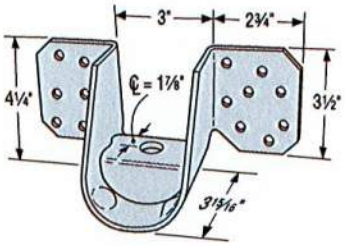

**LGT3-SDS2.5**
*(LGT4-SDS3 similar)*



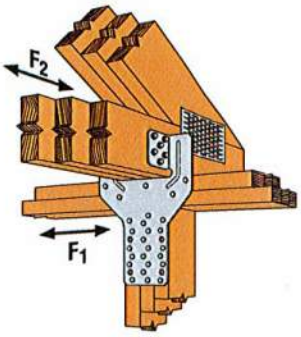

**LGT2**



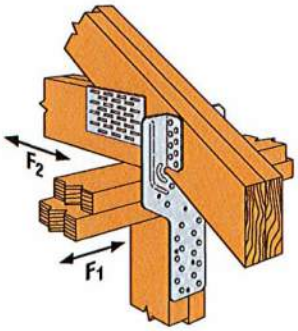

**MGT**




**VGT**
U.S. Patent
7,707,785




**Typical LGT3-SDS2.5 Installation**




**Typical LGT2 Installation**

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# LGT/MGT/VGT

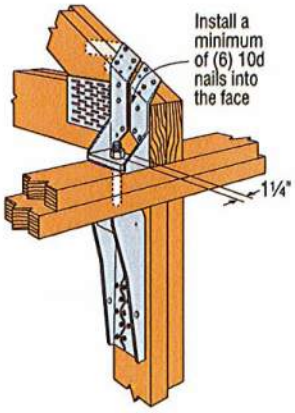
## Girder Tiedowns (cont.)

These products are available with additional corrosion protection. For more information, see p. 24.

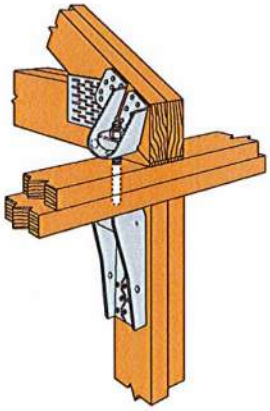
| Model No. | Qty. | No. of Plies | Fasteners: Studs or Anchor | Fasteners: Girder Truss | Factored Resistance ($K_D$ = 1.15) D.Fir-L Uplift | D.Fir-L Lateral $F_1$ | D.Fir-L Lateral $F_2$ | S-P-F Uplift | S-P-F Lateral $F_1$ | S-P-F Lateral $F_2$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | lb. | lb. | lb. | lb. | lb. | lb. |
| | | | | | kN | kN | kN | kN | kN | kN |
| LGT2 | 1 | 2 ply | (14) 10d[4] | (16) 10d | 3670 | 1170 | 285 | 2605 | 830 | 200 |
| | | | | | 16.33 | 5.20 | 1.27 | 11.59 | 3.69 | 0.89 |
| LGT3-SDS2.5 | 1 | 3 ply | (26) 10d | (12) ¼" x 2½" SDS | 6415 | 1335 | 670 | 4930 | 945 | 475 |
| | | | | | 28.54 | 5.94 | 2.98 | 21.93 | 4.20 | 2.11 |
| LGT4-SDS3 | 1 | 4 ply | (30) 10d[5] | (16) ¼" x 3" SDS | 6030 | 2785 | 1125 | 3980 | 1980 | 800 |
| | | | | | 26.82 | 12.39 | 5.00 | 17.70 | 8.81 | 3.56 |
| MGT | 1 | 2 ply min. | (1) ⅝" diameter | (22) 10d | 5610 | — | — | 3985 | — | — |
| | | | | | 24.96 | — | — | 17.73 | — | — |
| VGT | 1 | 2 ply min. | (1) ⅝" diameter | (16) ¼" x 3" SDS | 8600 | — | — | 6195 | — | — |
| | | | | | 38.26 | — | — | 27.56 | — | — |
| | 2 | 2 ply min. | (2) ⅝" diameter | (32) ¼" x 3" SDS | 11690 | — | — | 8420 | — | — |
| | | | | | 52.00 | — | — | 37.46 | — | — |
| VGTR/L | 1 | 2 ply min. | (1) ⅝" diameter | (16) ¼" x 3" SDS | 3475 | — | — | 2505 | — | — |
| | | | | | 15.46 | — | — | 11.14 | — | — |
| | 2 | 2 ply min. | (2) ⅝" diameter | (32) ¼" x 3" SDS | 6950 | — | — | 5010 | — | — |
| | | | | | 30.92 | — | — | 22.29 | — | — |

1. Attached members must be designed to resist the factored resistances.
2. Factored resistances have been increased 15% for uplift with no further increase allowed; reduce where other loads govern.
3. Additional anchorage products to be designed by others.
4. LGT2 — $F_2$ factored resistance requires installation of (4) 10d nails in optional nail holes.
5. LGT4 — $F_2$ factored resistance requires installation of (7) 10d nails in optional nail holes.
6. MGT can be installed with straps vertical for full table value provided 26-10d nails are installed to either a solid header or minimum double 2x6 web.
7. **Nails:** 10d = 0.148" dia. x 3" long. See pp. 27–28 for other nail sizes and information.

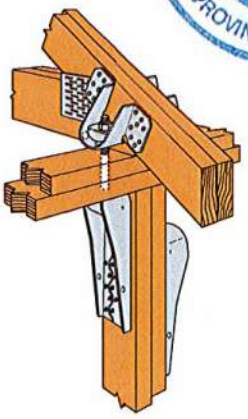
LICENSED PROFESSIONAL ENGINEER
Oct. 19, 2018
G. V. LUBARSKY
100044463
PROVINCE OF ONTARIO




Typical MGT Installation with HDU4



Typical VGTR Single Installation with HDU2



Typical VGT Double Installation with HDU4's



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# H – Seismic and Hurricane Ties

SIMPSON Strong-Tie®

The H connector series provides wind and seismic ties for trusses and rafters.

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

**Design:** • Factored resistances are in accordance with CSA O86-14

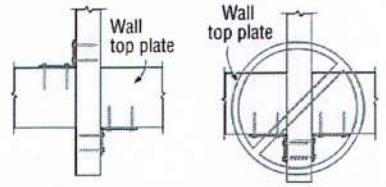
- Factored resistances have been increased 15%. No further increase is permitted.

**Installation:** • Use all specified fasteners

- Nails: 8d = 0.131" dia. x 2½" long common wire, 8d x 1½" = 0.131" x 1½ long, 10d x 1½" = 0.146" x 1½" long
- H1 can be installed with flanges facing outwards
- Hurricane ties do not replace solid blocking

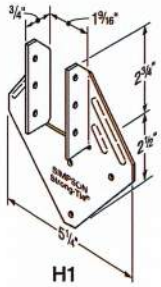
Factored resistances for more than one direction for a single connection cannot be added together. A factored load which can be divided into components in the directions given must be evaluated as follows: Factored Shear/Resisting Shear + Factored Tension/Resisting Tension ≤ 1.0.

**Hurricane Tie Installations to Achieve Twice the Load (Top View)**

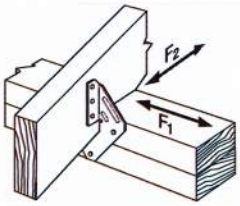



Install diagonally across from each other for minimum 2x truss.

Nailing into both sides of a single ply 2x truss may cause the wood to split.

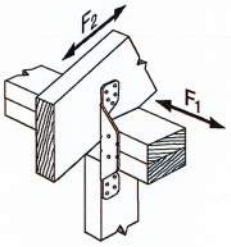



H1

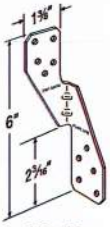



H1 Installation

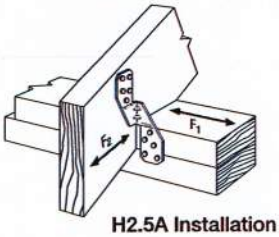
H2A



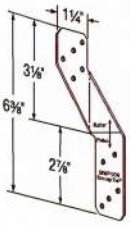

H2A Installation



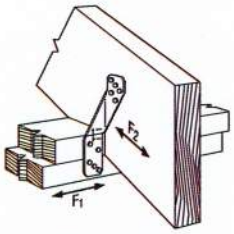

H2.5A



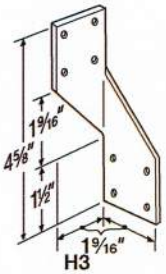

H2.5A Installation



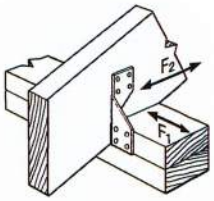

H2.5T



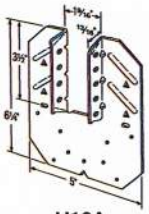

H2.5T Installation (Nails into both top plates)



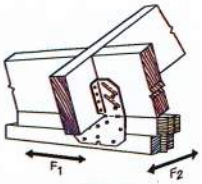

H3




H3 Installation




H10A




H10A Installation

| Model No. | Ga. | Fasteners | | | Factored Resistance (lb.) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | D.Fir-L | | | S-P-F | | |
| | | | | | Uplift | Normal | | Uplift | Normal | |
| | | To Rafter | To Plates | To Studs | | $F_1$ | $F_2$ | | $F_1$ | $F_2$ |
| | | | | | ($K_D$=1.15) | | | ($K_D$=1.15) | | |
| H1 | 18 | (6) 8d x 1½" | (4) 8d | — | 740 | 685 | 300 | 680 | 485 | 215 |
| H2A | 18 | (5) 8d x 1½" | (2) 8d x 1½" | (5) 8d x 1½" | 830 | 220 | 75 | 590 | 155 | 55 |
| H2.5A | 18 | (5) 8d | (5) 8d | — | 805 | 160 | 160 | 755 | 160 | 160 |
| H2.5T | 18 | (5) 8d | (5) 8d | — | 835 | 175 | 240 | 740 | 160 | 210 |
| H3 | 18 | (4) 8d | (4) 8d | — | 740 | 180 | 265 | 615 | 125 | 190 |
| H10A | 18 | (9) 10d x 1½" | (9) 10d x 1½" | — | 1735 | 795 | 410 | 1505 | 565 | 290 |

1. Factored resistances have been increased 15% for earthquake or wind loading with no further increase allowed.
2. Factored resistances are for one anchor. A minimum rafter thickness of 2½" must be used when framing anchors are installed on each side of the joist and on the same side of the plate.
3. When cross-grain bending or cross-grain tension cannot be avoided, mechanical reinforcement to resist such forces should be considered.
4. Hurricane ties are shown installed on the outside of the wall for clarity. Installation on the inside of the wall is acceptable. For a Continuous Load Path, connections must be on same side of the wall.

LICENSED PROFESSIONAL ENGINEER
04/01/2020
B. D. BUNTING
PROVINCE OF ONTARIO

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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(800) 999-5099
strongtie.com

# LUS – Double Shear Joist Hangers

SIMPSON Strong-Tie®

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

**Material:** 18 gauge

**Finish:** G90 galvanized

**Design:**

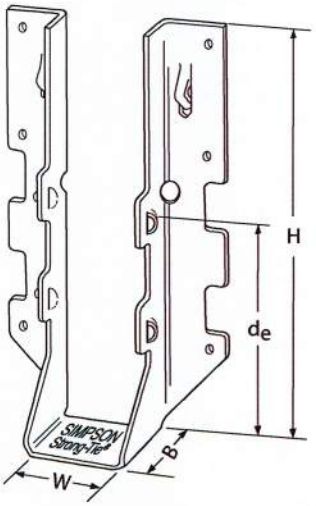
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

**Installation:**

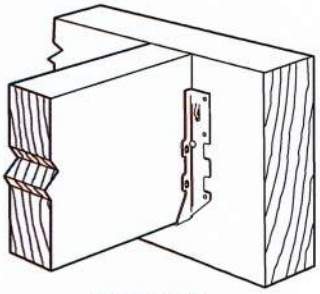
- Use all specified fasteners.
- Nails: 16d = 0.162" dia. x 3½" long common wire, 10d = 0.148" x 3" long common wire.
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads.
- Not designed for welded or nailer applications.

**Options:**

- These hangers cannot be modified



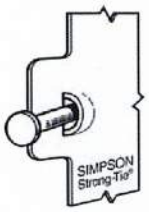

LUS28



Typical LUS Installation

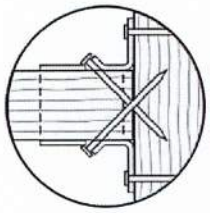
| Model No. | Ga. | Dimensions (in.) | | | | Fasteners | | Factored Resistance (lb.) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | D.Fir-L | | S-P-F | |
| | | W | H | B | $d_e$[1] | Face | Joist | Uplift ($K_D$=1.15) | Normal ($K_D$=1.00) | Uplift ($K_D$=1.15) | Normal ($K_D$=1.00) |
| LUS24 | 18 | 1 9/16 | 3 1/8 | 1 3/4 | 1 15/16 | (4) 10d | (2) 10d | 710 | 1630 | 645 | 1155 |
| LUS24-2 | 18 | 3 1/8 | 3 1/8 | 2 | 1 13/16 | (4) 16d | (2) 16d | 835 | 2020 | 590 | 1435 |
| LUS26 | 18 | 1 9/16 | 4 3/4 | 1 3/4 | 3 5/8 | (4) 10d | (4) 10d | 1420 | 2170 | 1290 | 1630 |
| LUS26-2 | 18 | 3 1/8 | 4 7/8 | 2 | 4 | (4) 16d | (4) 16d | 1720 | 2595 | 1545 | 1920 |
| LUS26-3 | 18 | 4 5/8 | 4 3/16 | 2 | 3 1/4 | (4) 16d | (4) 16d | 1720 | 2595 | 1545 | 2340 |
| LUS28 | 18 | 1 9/16 | 6 5/8 | 1 3/4 | 3 3/4 | (6) 10d | (6) 10d | 1420 | 2520 | 1290 | 1790 |
| LUS28-2 | 18 | 3 1/8 | 7 | 2 | 4 | (6) 16d | (4) 16d | 1720 | 3325 | 1545 | 2575 |
| LUS28-3 | 18 | 4 5/8 | 6 1/4 | 2 | 3 1/4 | (6) 16d | (4) 16d | 1720 | 3325 | 1545 | 2375 |
| LUS210 | 18 | 1 9/16 | 7 13/16 | 1 3/4 | 3 7/8 | (8) 10d | (4) 10d | 1420 | 2785 | 1290 | 2210 |
| LUS210-2 | 18 | 3 1/8 | 9 | 2 | 6 | (8) 16d | (6) 16d | 2580 | 4500 | 2320 | 3195 |
| LUS210-3 | 18 | 4 5/8 | 8 3/16 | 2 | 5 1/4 | (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.

LICENSED PROFESSIONAL ENGINEER
04/01/2020
B. D. BUNTING
PROVINCE OF ONTARIO

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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(800) 999-5099
strongtie.com

TECHNICAL BULLETIN

# 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:**

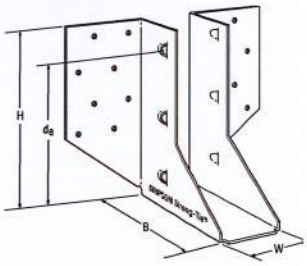
- Factored resistances are in accordance with CSA O86 -14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

**Installation:**

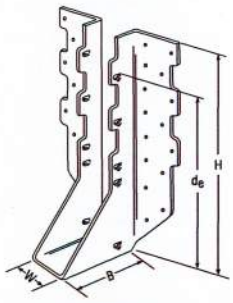
- Use all specified fasteners
- Nails: 16d = 0.162" dia. x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

**Options:**

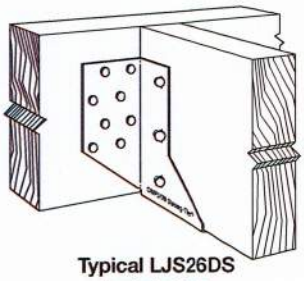
- See current catalogue for options



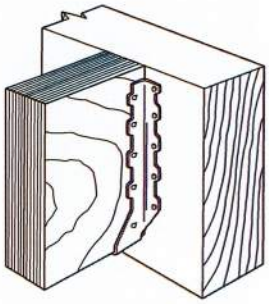

LJS26DS



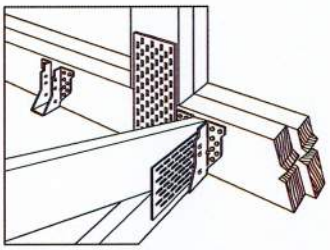

HUS210
(HUS26, HUS28, similar)



Typical LJS26DS Installation



Typical HUS Installation



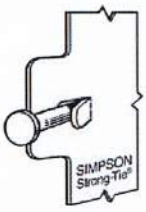
Typical HUS Installation
(Truss Designer to provide fastener quantity for connecting multiple members together)

| Model No. | Ga. | Dimensions (in.) | | | | Fasteners | | Factored Resistance (lb.) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | D.Fir-L | | S-P-F | |
| | | W | H | B | $d_e$[1] | Face | Joist | Uplift ($K_D$=1.15) lb. | Normal ($K_D$=1.00) lb. | Uplift ($K_D$=1.15) lb. | Normal ($K_D$=1.00) lb. |
| LJS26DS | 18 | 1 9/16 | 5 | 3½ | 4⅝ | (16) 16d | (6) 16d | 2055 | 4265 | 1460 | 4115 |
| HUS26 | 16 | 1⅝ | 5⅜ | 3 | 3 15/16 | (14) 16d | (6) 16d | 2705 | 4940 | 2065 | 3875 |
| HUS28 | 16 | 1⅝ | 7 3/32 | 3 | 6 3/32 | (22) 16d | (8) 16d | 3605 | 5365 | 2675 | 4345 |
| HUS210 | 16 | 1⅝ | 9 3/32 | 3 | 7 31/32 | (30) 16d | (10) 16d | 4505 | 5795 | 4010 | 4740 |
| HUS1.81/10 | 16 | 1 13/16 | 9 | 3 | 8 | (30) 16d | (10) 16d | 4505 | 6450 | 4010 | 5200 |

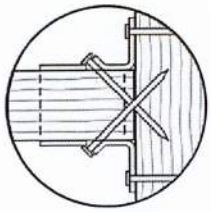
1. $d_e$ is the distance from the seat of the hanger to the highest joist nail.

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

U.S. Patent 5,603,580




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



Double Shear Nailing Top View.

LIMIT STATES DESIGN

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TECHNICAL BULLETIN

# HHUS – Double Shear Joist Hangers

SIMPSON Strong-Tie®

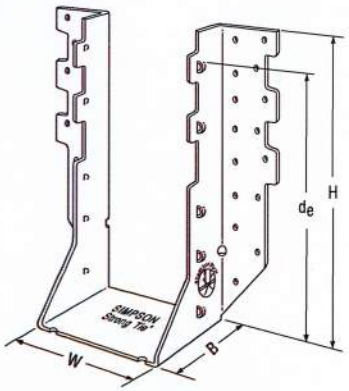
All HHUS hangers have double shear nailing. This patented innovation distributes the load through two points on each joist nail for greater strength. It also allows the use of fewer nails, faster installation and the use of common nails for all connections. Do not bend or remove tabs.

**Material:** 14 gauge

**Finish:** G90 galvanized

**Design:**

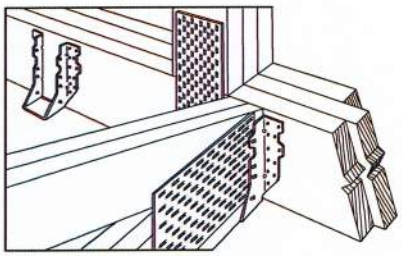
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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




HHUS410

**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



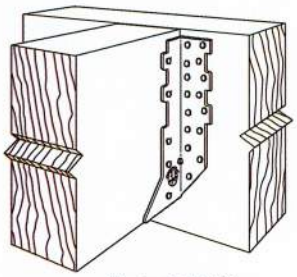
Typical HHUS Installation (Truss Designer to provide fastener quantity for connecting multiple members together)

**Options:**

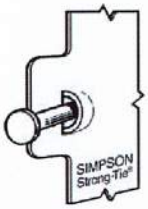
- See current catalogue for options

| Model No. | Ga. | Dimensions (in.) | | | | Fasteners | | Factored Resistance (lb.) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | D.Fir-L | | S-P-F | |
| | | W | H | B | $d_e$[1] | Face | Joist | Uplift ($K_D$=1.15) | Normal ($K_D$=1.00) | Uplift ($K_D$=1.15) | Normal ($K_D$=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 7/32 | 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 5/8 | 5 13/32 | 3 | 3 15/16 | (14) 16d | (6) 16d | 2540 | 7335 | 2065 | 5205 |
| HHUS48 | 14 | 3 5/8 | 7 1/8 | 3 | 6 1/8 | (22) 16d | (8) 16d | 3765 | 8940 | 2675 | 6345 |
| HHUS410 | 14 | 3 5/8 | 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 5/16 | 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.

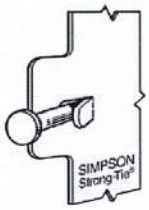


Typical HHUS Installation

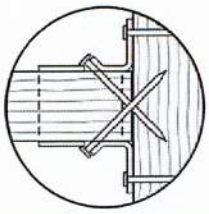



Dome Double Shear Nailing prevents tabs breaking off (available on some models).

U.S. Patent 5,603,580




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



Double Shear Nailing Top View.

LIMIT STATES DESIGN

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T-SPECHHUS20 3/20 exp. 6/22

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TECHNICAL BULLETIN

# HGUS – Double Shear Joist Hangers

SIMPSON Strong-Tie®

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

**Material:** 12 gauge

**Finish:** G90 galvanized

**Design:**

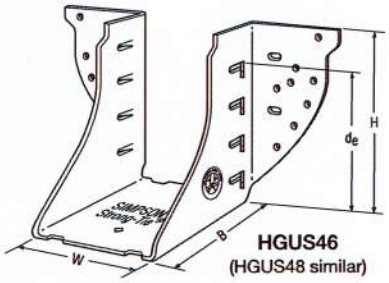
- Factored resistances are in accordance with CSA O86-14.
- Uplift resistances have been increased 15%. No further increase is permitted.
- Wood shear is not considered in the factored resistances given. The specifier must ensure that the joist and header capacities are capable of withstanding these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

**Installation:**

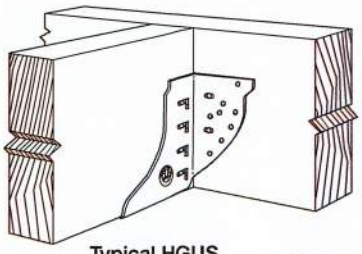
- Use all specified fasteners
- Nails: 16d = 0.162" dia x 3½" long common wire
- Double shear nails must be driven at an angle through the joist or truss into the header to achieve the table loads
- Not designed for welded or nailer applications

**Options:**

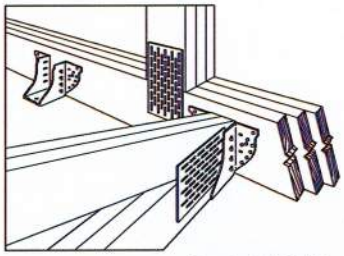
- See current catalogue for options




**HGUS46**
(HGUS48 similar)



**Typical HGUS Installation**



**Typical HGUS Installation**

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

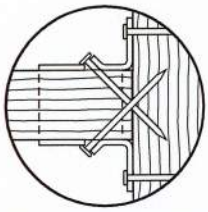
| Model No. | Ga. | Dimensions (in.) | | | | Fasteners | | Factored Resistance (lb.) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | D.Fir-L | | S-P-F | |
| | | W | H | B | $d_e$[1] | Face | Joist | Uplift ($K_D$=1.15) | Normal ($K_D$=1.00) | Uplift ($K_D$=1.15) | Normal ($K_D$=1.00) |
| HGUS48 | 12 | 3⅝ | 7⅛ | 4 | 6 1/16 | (36) 16d | (12) 16d | 6070 | 12980 | 4310 | 9215 |
| HGUS410 | 12 | 3⅝ | 9 | 4 | 8 1/16 | (46) 16d | (16) 16d | 6840 | 14015 | 4855 | 10270 |
| HGUS412 | 12 | 3⅝ | 10 7/16 | 4 | 10 1/16 | (56) 16d | (20) 16d | 7640 | 14995 | 5425 | 10645 |
| HGUS414 | 12 | 3⅝ | 12 7/16 | 4 | 11 1/16 | (66) 16d | (22) 16d | 10130 | 16400 | 7195 | 11645 |
| HGUS5.50/8 | 12 | 5½ | 6 15/16 | 4 | 6⅛ | (36) 16d | (12) 16d | 6070 | 12980 | 4310 | 9215 |
| HGUS5.50/10 | 12 | 5½ | 8 15/16 | 4 | 8⅛ | (46) 16d | (16) 16d | 6840 | 14645 | 4855 | 10400 |
| HGUS5.50/12 | 12 | 5½ | 10½ | 4 | 10⅛ | (56) 16d | (20) 16d | 7640 | 14995 | 5425 | 10645 |
| HGUS5.50/14 | 12 | 5½ | 12½ | 4 | 11⅛ | (66) 16d | (22) 16d | 10130 | 16400 | 7195 | 11645 |
| HGUS7.25/8 | 12 | 7¼ | 7 7/32 | 4 | 6 13/32 | (36) 16d | (12) 16d | 6070 | 12980 | 4310 | 9215 |
| HGUS7.25/10 | 12 | 7¼ | 8⅝ | 4 | 8¼ | (46) 16d | (16) 16d | 6840 | 15760 | 4855 | 11190 |
| HGUS7.25/12 | 12 | 7¼ | 10⅝ | 4 | 10¼ | (56) 16d | (20) 16d | 7640 | 16110 | 5425 | 11435 |
| HGUS7.25/14 | 12 | 7¼ | 12⅝ | 4 | 11¼ | (66) 16d | (22) 16d | 10130 | 18200 | 7195 | 12920 |

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

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

U.S. Patent 5,603,580

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



Double Shear Nailing Top View.

LIMIT STATES DESIGN

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# TC – Truss Connectors

SIMPSON Strong-Tie®

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

**Material:** 16 gauge

**Finish:** G90 galvanized

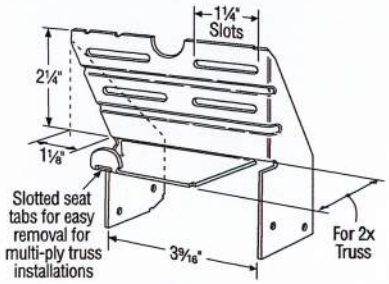
**Design:** Factored resistances are in accordance with CSA 086-14

### Installation:

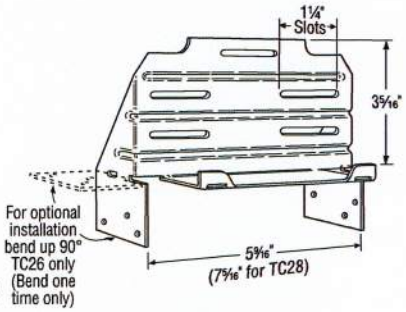
- Use all specified fasteners.
- Nails: 10d = 0.148" dia. x 3" long common wire, 10d x 1½ = 0.148" dia. x 1½" long.
- Drive 10d nails into the truss at the inside end of the slotted holes (inside end is towards the centre of the truss) and clinch on the back side. Do not seat these nails into the truss–allow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

### Optional TC Installation:

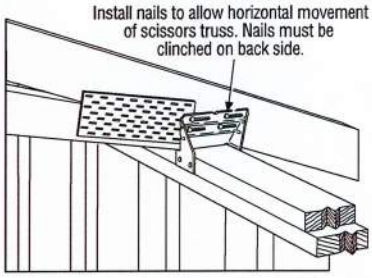
- Bend one flange up 90°. Drive specified nails into the top and face of the top plates or install Titen® screws into the top and face of masonry wall. See optional load tables and installation details.



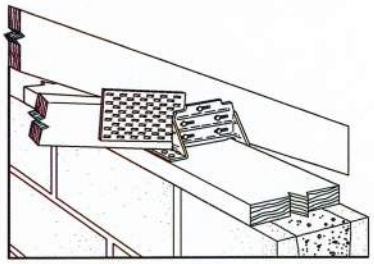

**TC24**
U.S. Patent 4,932,173



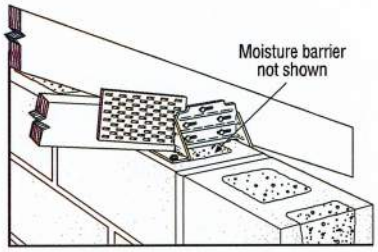

**TC26**
(TC28 Similiar)




**Typical TC24 Installation**



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




**Optional TC26 Installation for Grouted Concrete Block using Titen Screws**

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

### Optional TC Installation Table

| Model No. | Fasteners | | Factored Resistance | |
|---|---|---|---|---|
| | Truss | Wall Plates | D.Fir-L | S-P-F |
| | | | Uplift ($K_D$=1.15) | Uplift ($K_D$=1.15) |
| | | | lb. | lb. |
| TC26 | (5) 10d | (6) 10d x 1½" | 810 | 660 |
| | (5) 10d | (6) 10d | 930 | 660 |

1. Factored resistances have been increased 15% for earthquake or wind loading; no further increase allowed; reduce where other loads govern.
2. Grout strength is 15 MPa minimum.
3. Optional TC26 installation with 10d nails requires minimum 3" top plate thickness.
4. TC26 fastened to grouted concrete block with (6) – ⁹⁄₁₆" x 2¼" Titen screws has a factored uplift resistance of 275 lb.

LIMIT STATES DESIGN

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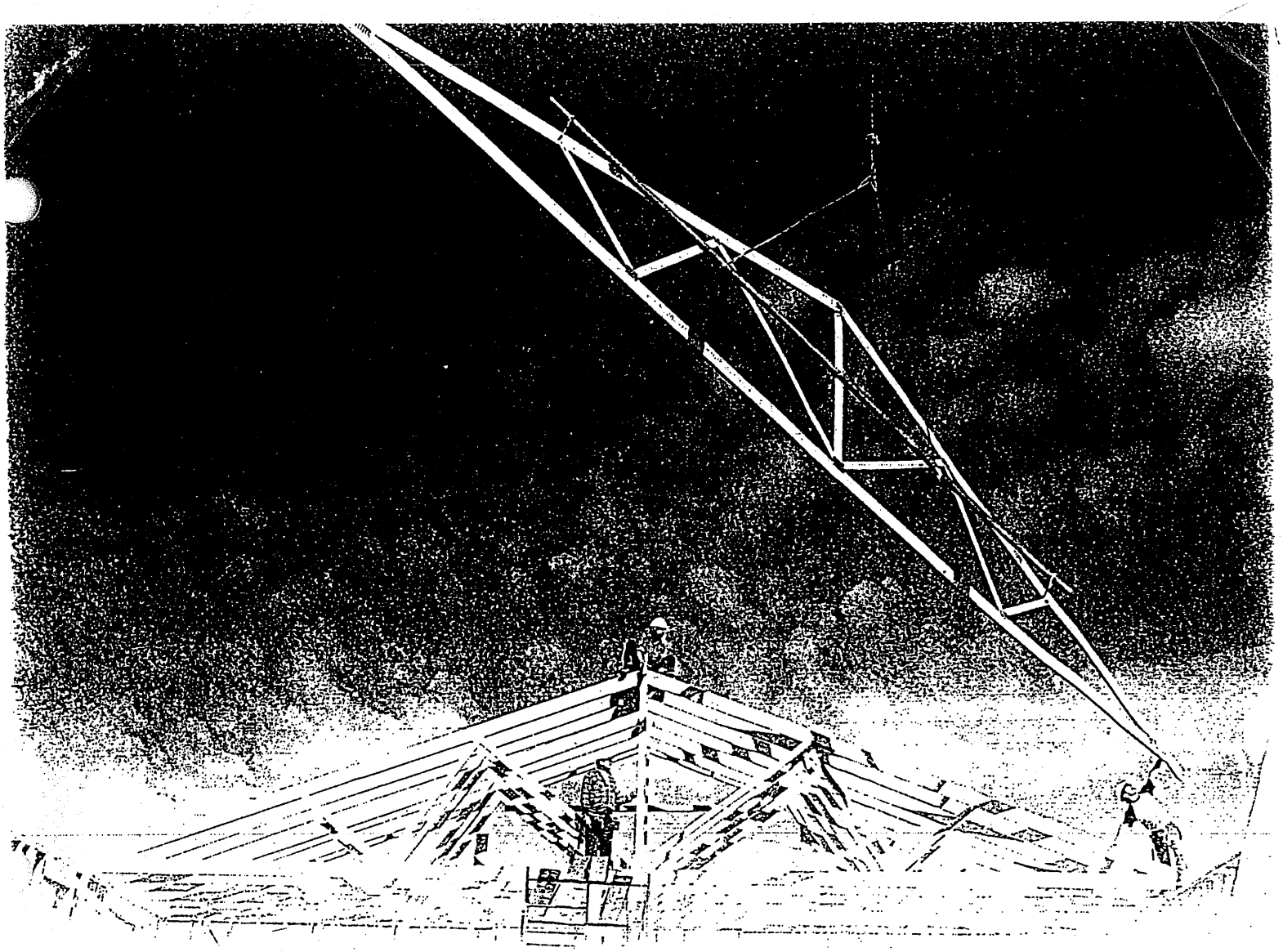


# Wood Truss Installation

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

# Table of Content


Warning.....4

1 Unloading & Lifting.....5

2 Job Site Handling.....5

3 Hoisting.....6

4 Beginning the Erection Process.....7

5 Erection Tolerance.....8

6 Bracing.....8

7 Bracing Requirements for 3 Planes of Roof.....9

8 Stacking Materials.....10

Caution Notes.....11

# 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.

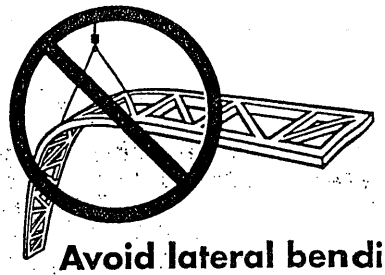
## Special Design Requirements

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

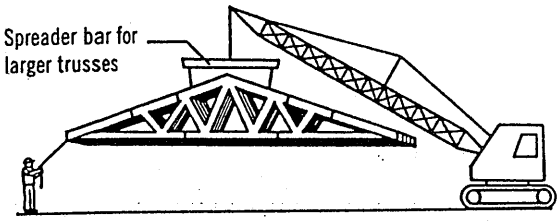
Beginning with the unloading process, and throughout all phases of construction, care must be taken to avoid **lateral bending** of trusses, which can cause damage to the lumber and metal connector plates at the joints.

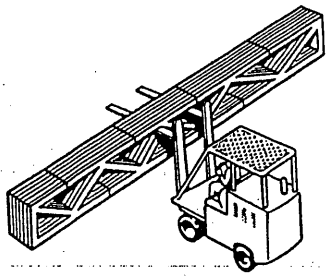


**Avoid lateral bending**

- **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.**

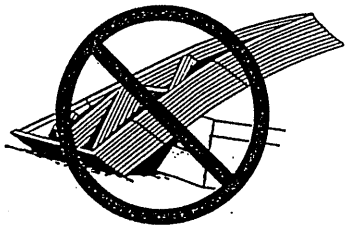
# 2 Job Site Handling



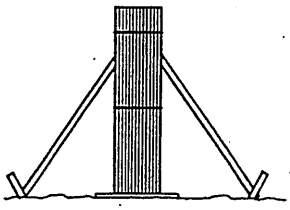
## All trusses should be picked up at the top chords in a vertical position only

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.



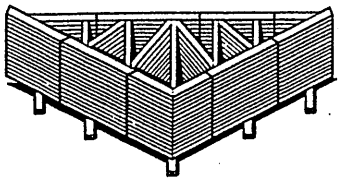
### Do not store unbraced bundles upright

If trusses are stored vertically they shall be braced in a manner that will prevent tipping or topping. Generally cuting 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.

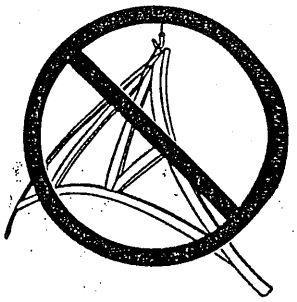


**Care should be exercised when removing banding to avoid damaging trusses.**

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.

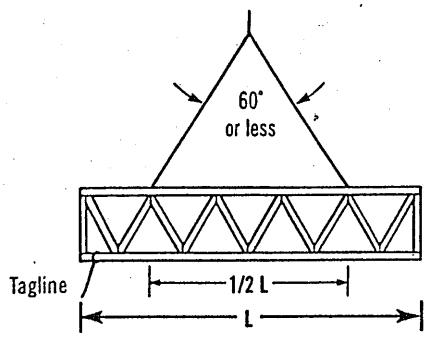
# 3 Hoisting

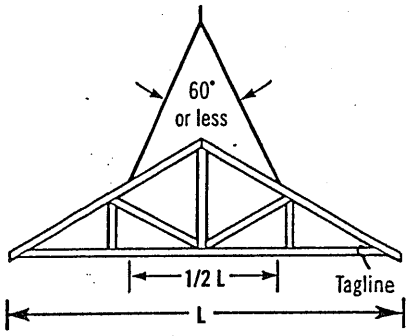
**All trusses that are erected one at a time shall be held safely in position by the erection equipment until such time as all necessary bracing has been installed and the ends of the trusses are securely fastened to the building.**



**Avoid lateral bending**

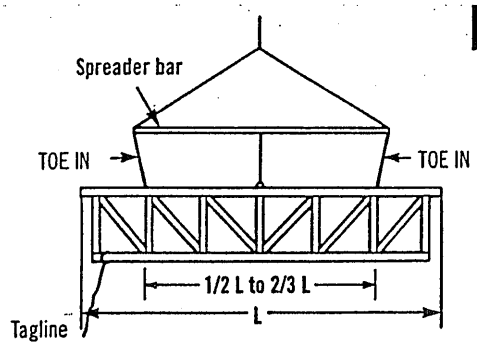
**L ≤ 30'**

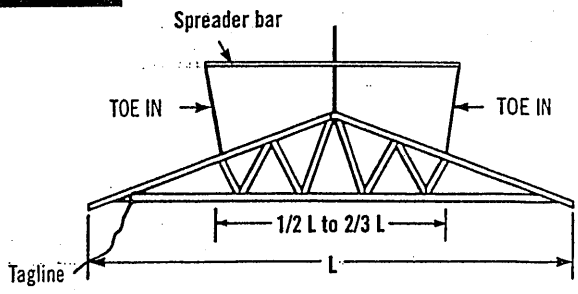



Truss sling is acceptable where these criteria are met.

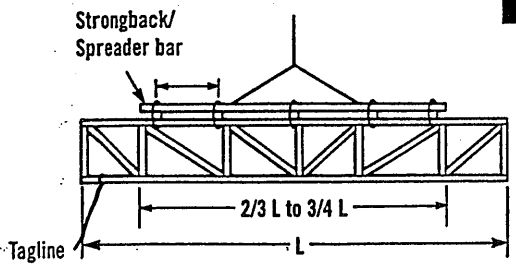
**30' < L ≤ 60'**

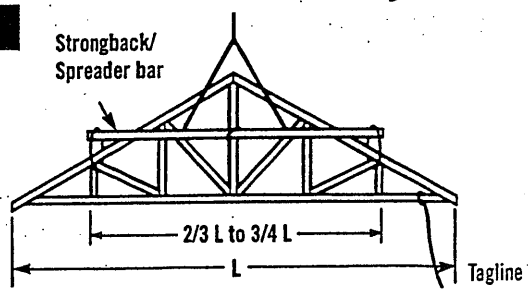



Use spreader bar in all other cases. It should be noted that the lines from the ends of the spreader bar "**TOE IN**"; if these lines should "**TOE OUT**" the truss may fold in half.

**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

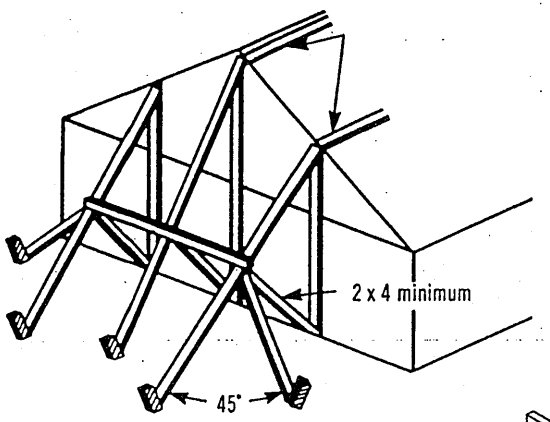
It is important for the builder or erection contractor to provide substantial bracing for the first truss erected. The two or more trusses making up the rest of the first set are tied to and rely upon the first truss for stability. Likewise, after this first set of trusses is adequately cross-braced, 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

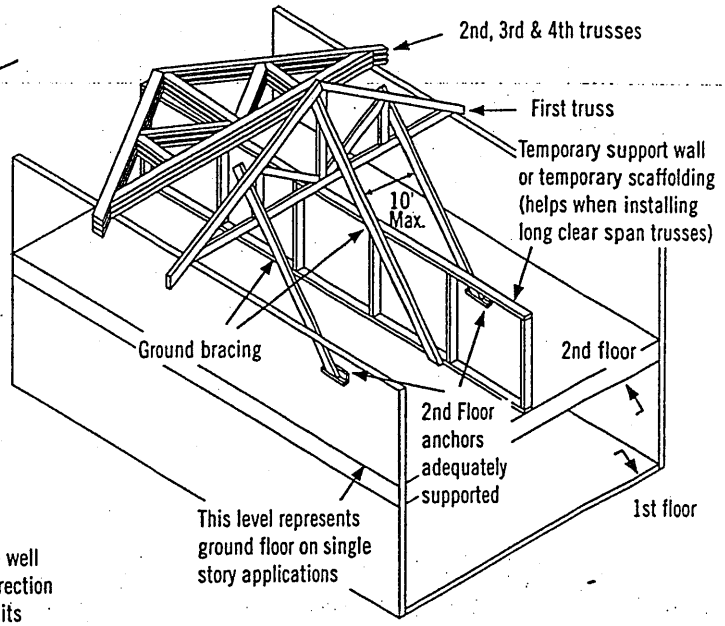
One satisfactory method ties the first unit of trusses off to a series of braces that are attached to a stake driven into the ground and securely anchored. The ground brace itself should be supported as shown below or it is apt to buckle. Additional ground braces in the opposite direction, inside the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

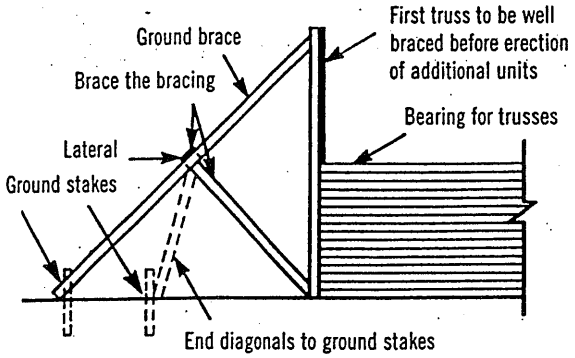
## Ground Brace – Interior

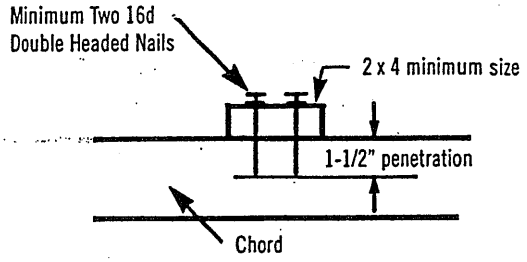
Another satisfactory method where height of building or ground conditions prohibit bracing from the exterior is to tie the first truss rigidly in place from the interior at the floor level, provided the floor is substantially completed and capable of supporting the ground bracing forces. Securely fasten 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.




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



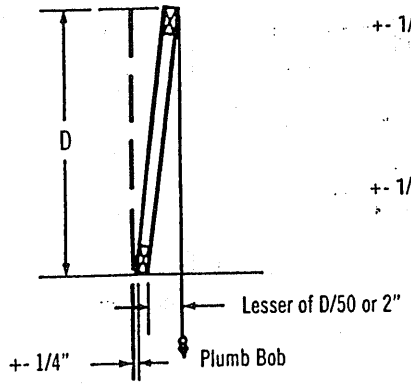



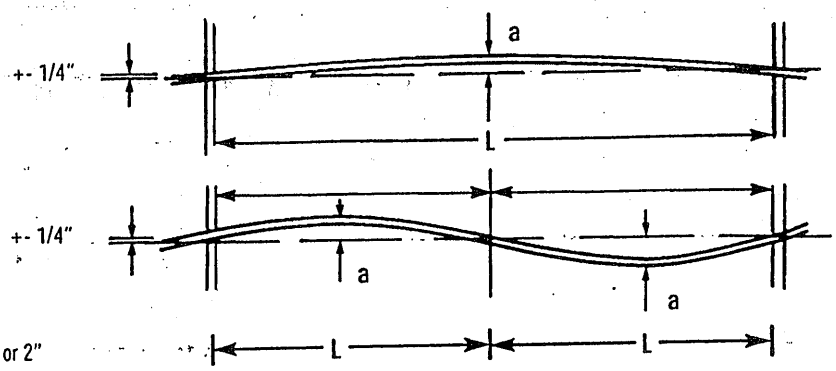

**Inadequate size of bracing material or inadequate fastening is a major cause of erection dominoing.**

# 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.

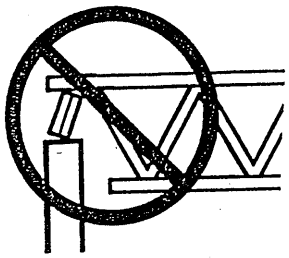
**When sheathing, make sure nails are driven into the top chord of the trusses.**



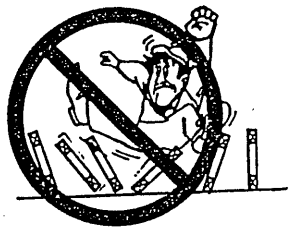




**L = 16' to 32', a = 1"**
**L = 32' & over, a = 2"**

# 6 Bracing

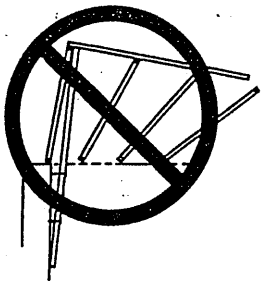


**Do not install trusses on temporarily connected supports**



**Do not walk on unbraced trusses**

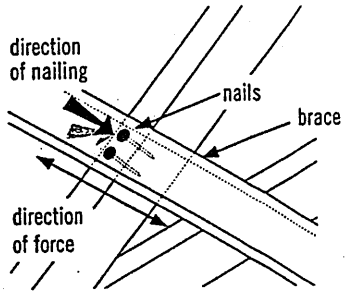
**Do not walk on trusses or gable ends lying flat**



**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.



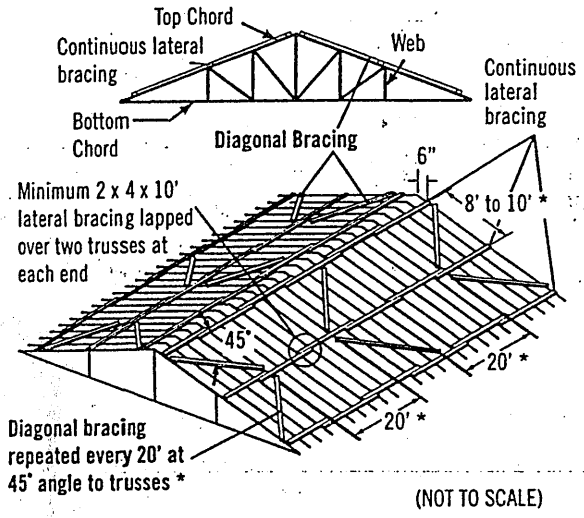

**Well nailed (perpendicular to force)**

# 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.

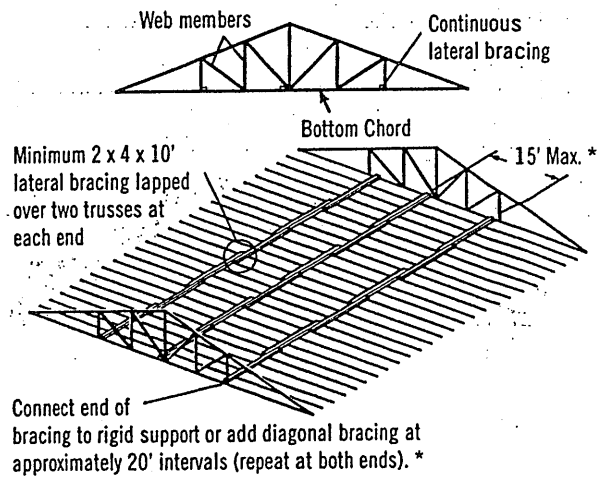



(NOT TO SCALE)

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.

### 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.



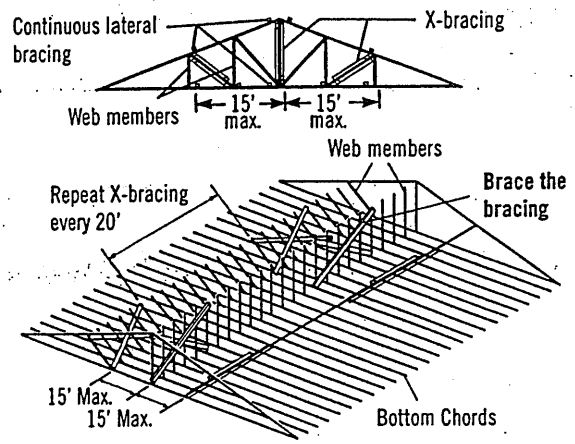

* Long spans, heavy loads or other spacing configurations may require closer spacing between lateral bracing and closer intervals between diagonals. Consult the building designer or HIB and DSB (*Recommended Design Specification for Temporary Bracing of Metal-Plate Connected Wood Trusses*) for details.

**Diagonal or cross-bracing is very important!**

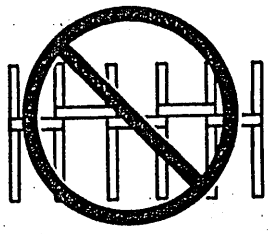
### 3) Web Member Plane

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

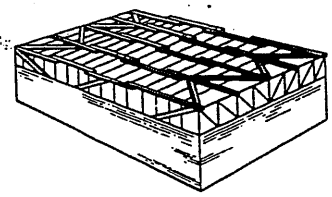
X-bracing should be installed on vertical web members wherever possible, at or near lateral bracing. Plywood or OSB may be substituted for X-bracing.




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



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

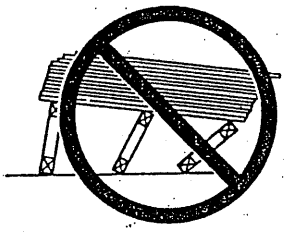


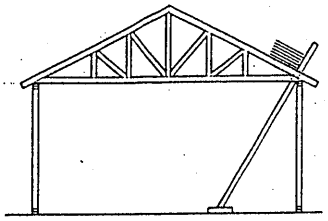
**Bracing requirements using the same principles apply to parallel chord trusses**

# 8 Stacking Materials

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

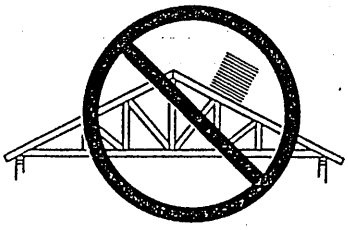
**Never stack materials on unbraced or inadequately braced trusses**

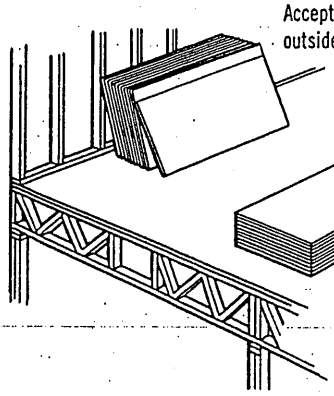




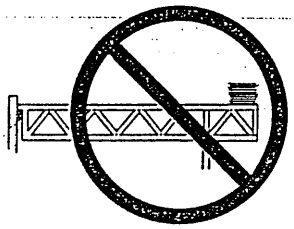

Proper distribution of construction materials is a must during construction.

**Never stack materials near a peak**

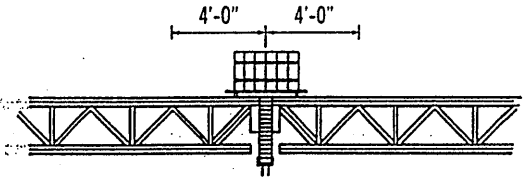


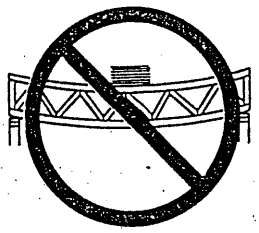


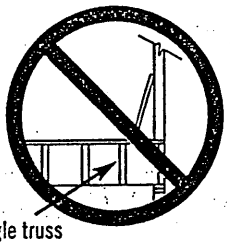

**Never stack materials on the cantilever of a truss**



Always stack materials over two or more trusses.



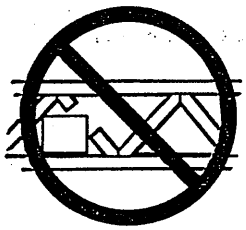



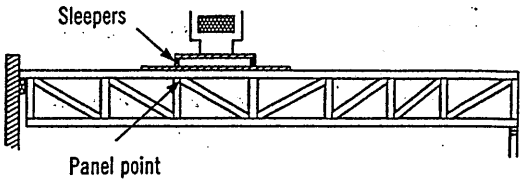



Roofing and mechanical contractors are cautioned to stack materials only along outside supporting members or directly over inside supporting members. Trusses are not designed for dynamic loads (i.e., moving vehicles). Extreme care should be taken when loading and stacking construction materials (rolled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

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

**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.

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