

"W" TRUSS — 4/12 SLOPE, 2' ON CENTER, 20'-8" to 32'-8" SPANS

For instructions on jig layout and subassembly of members, see "How To Build The Small Homes Council's 'W' Truss, 5/12 Slope."

MEMBER SIZES AND CONNECTIONS		Use 1100 p.s.i. Stress Grade †										
MEMBERS	21'	22'	23'	24'	25'	26'	27'	28'	29'	30'	31'	32'
Two Upper Top Chords	One 2" x 6" x 16'			One 2" x 6" x 18'				Two 2" x 6" x 10'				
Two Lower Top Chords*	Two 2" x 6" x 10'						Two 2" x 6" x 12'					
Two Bottom Chords	Two 2" x 4" x 12'		Two 2" x 4" x 14'				Two 2" x 6" x 16'			Two 2" x 6" x 18'		
Two Short Diagonals	One 2" x 4" x 8'						One 2" x 4" x 10'					
Two Long Diagonals	One 2" x 4" x 12'	One 2" x 4" x 14'			One 2" x 4" x 16'		One 2" x 4" x 16'***	One 2" x 4" x 18'***				

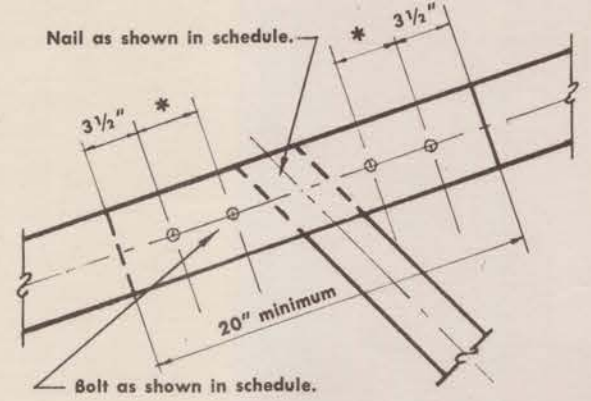
CONNECTIONS		21'	22'	23'	24'	25'	26'	27'	28'	29'	30'	31'	32'
Top Chord Splice		3 — 1/2" Bolts						4 — 1/2" Bolts					
Bottom Chord Splice		2 — 1/2" Bolts						3 — 1/2" Bolts					
Short Diagonal to Top or Bottom Chord		5 — 10d Nails			6 — 10d Nails				7 — 10d Nails				
Long Diagonal to Top or Bottom Chord		6 — 10d Nails			7 — 10d Nails				8 — 10d Nails				
Top Chord to Top or Bottom Chord		1 — 2 1/2" Split ring with 1/2" bolt at peak and heel joints											

† Grading provisions to be applied to entire length of piece. Knots or other strength defects should not occur at sections that are notched or drilled for rings.
 * The length of these members has been computed to provide an 18" horizontal overhang.
 ** Laterally brace long diagonals at center with scabs or solid bridging.

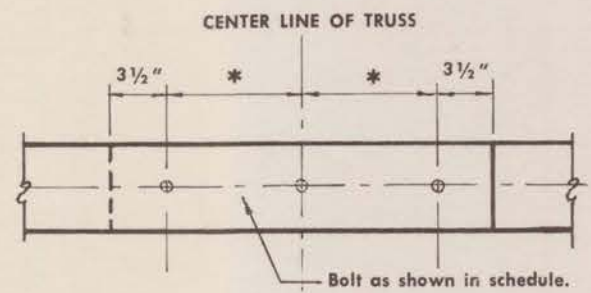
BOLT DETAILS

Bolt holes to be drilled in place during final assembly.

TOP CHORD SPLICE



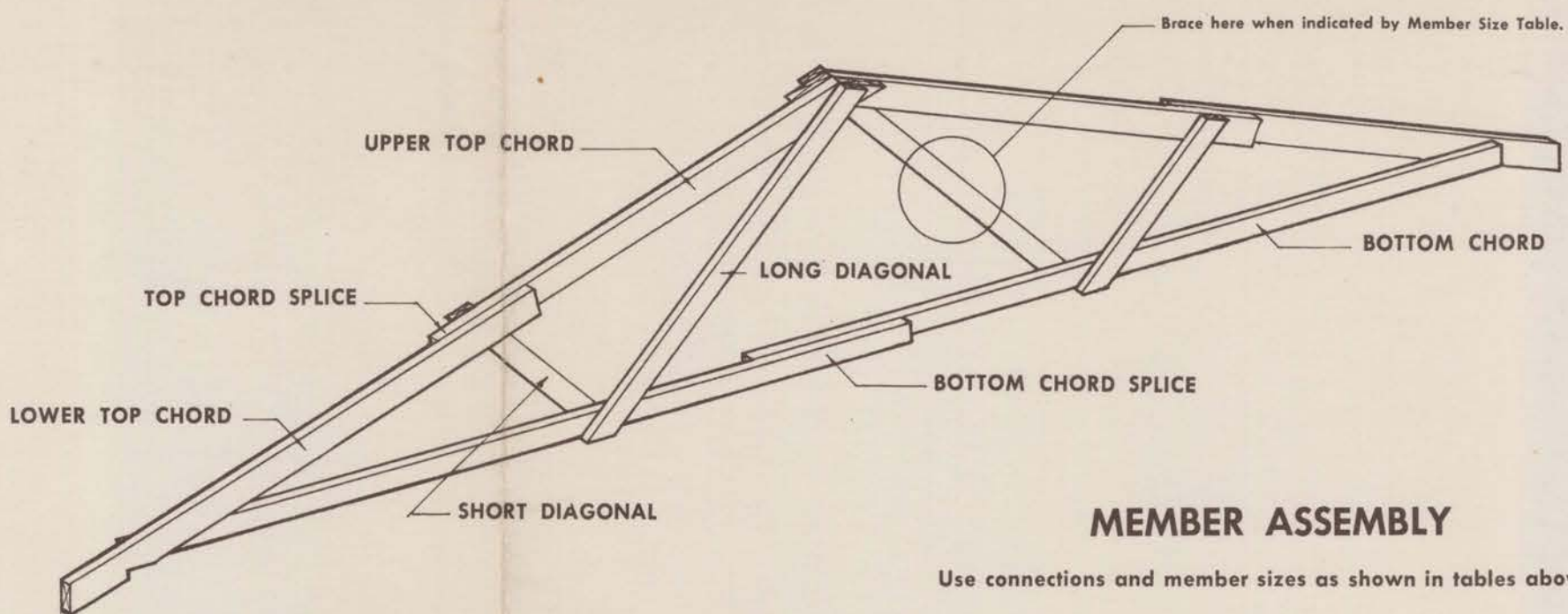
BOTTOM CHORD SPLICE



* Bolts shall not be spaced less than 2" apart.

CUTTING DIAGRAMS

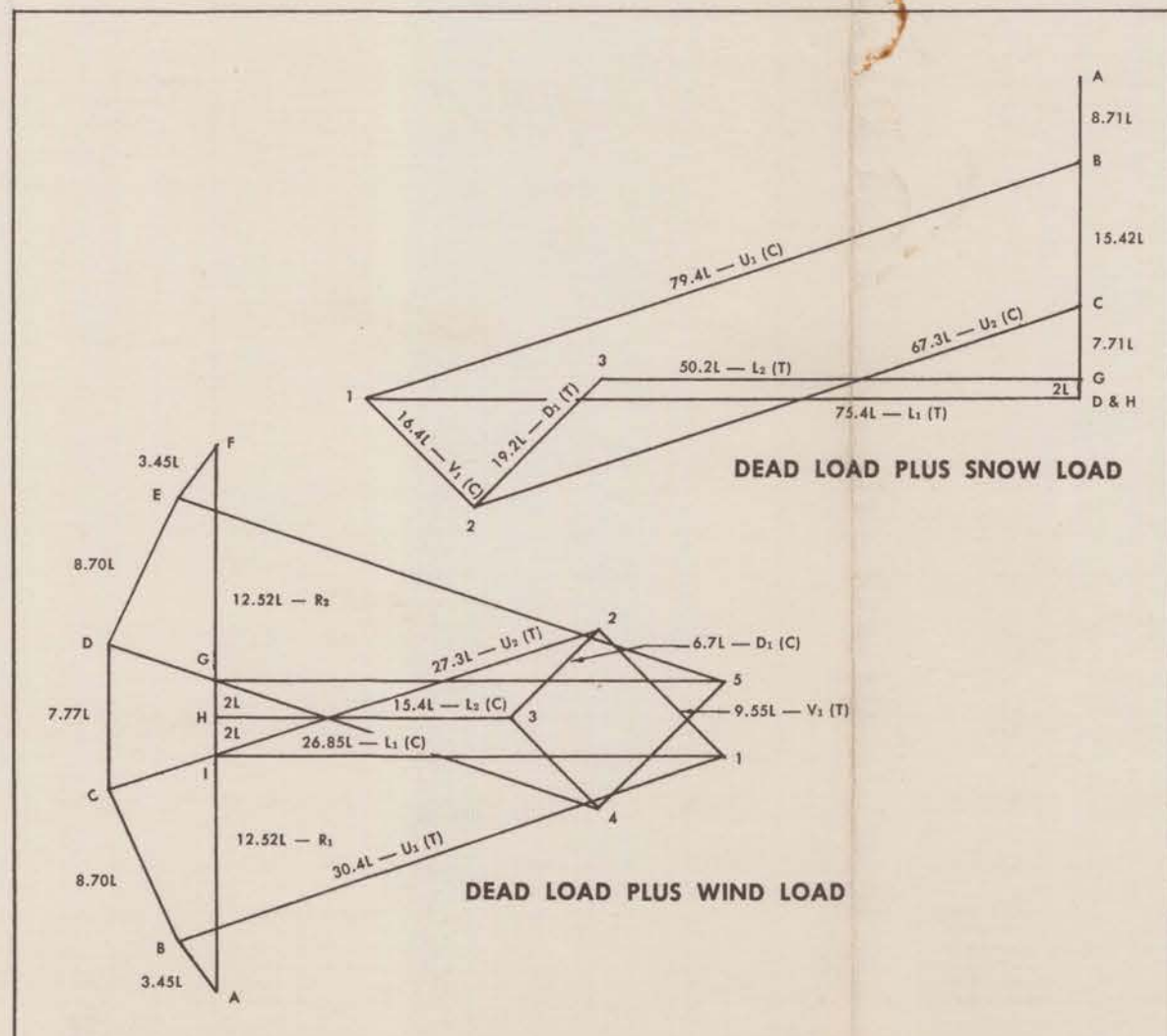
BOTTOM CHORD Drill for 2 1/2" Ring Exactly As Shown	LOWER TOP CHORD Drill for 2 1/2" Ring Exactly As Shown	UPPER TOP CHORD Drill for 2 1/2" Ring Exactly As Shown	LONG DIAGONAL Drill for 1/2" Bolt Exactly As Shown
<p>2" x 4" Use With 2" x 6" Top Chord</p>	<p>2" x 6" Use With 2" x 4" Bottom Chord</p>	<p>2" x 6" Use With 2" x 6" Top Chord</p>	<p>2" x 4" Mark Cut During Pattern Assembly</p>
<p>2" x 6" Use With 2" x 6" Top Chord</p>	<p>2" x 6" Use With 2" x 4" Bottom Chord</p>	<p>* Based on 18" horizontal overhang. If a different overhang is desired, revise this dimension and, if necessary, revise the length of the lower top chord, allowing at least a 20-inch lap for the splice in all cases.</p>	<p>2" x 4" Mark Cut During Pattern Assembly</p>



MEMBER ASSEMBLY

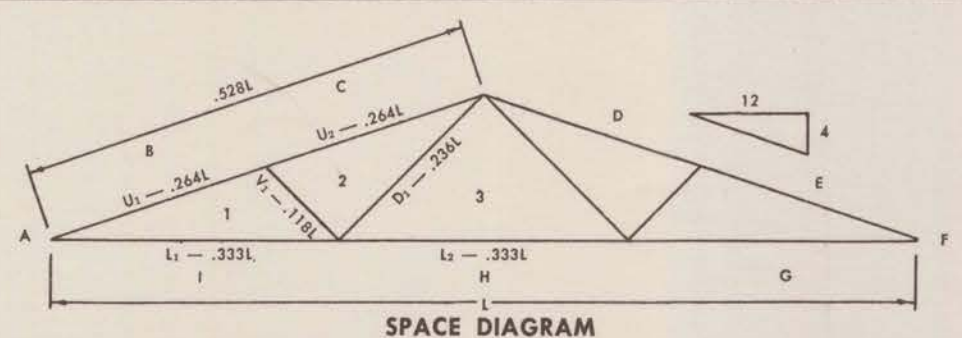
Use connections and member sizes as shown in tables above.

DESIGN DATA



LOADING VALUES

SNOW: 23.3 p.s.f. horizontal projection	DEAD: 10.5 p.s.f. horizontal projection
WIND: 23 p.s.f. upward normal	NO ATTIC STORAGE



UNIVERSITY OF ILLINOIS SMALL HOMES COUNCIL URBANA, ILLINOIS

"W" TRUSS FOR 20'-8" TO 32'-8" SPANS

(4/12 SLOPE, 2' ON CENTER)

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