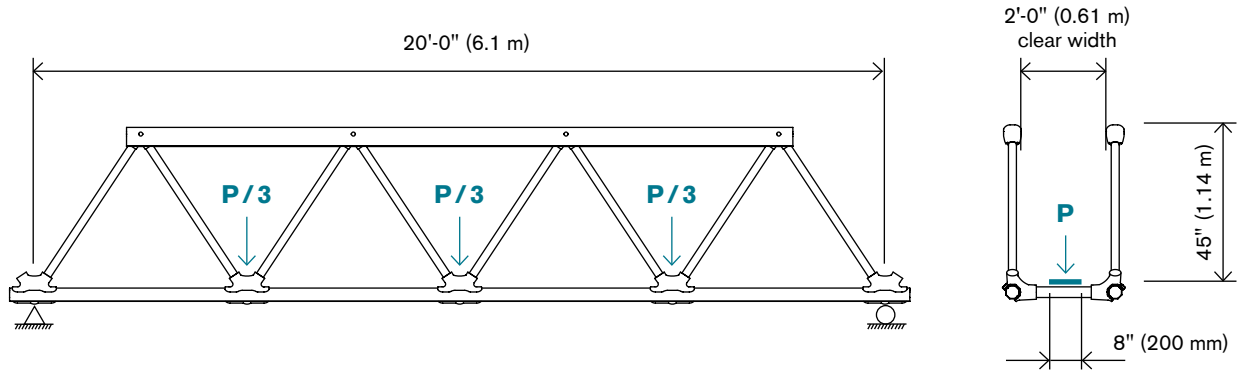


# Destructive Testing



A destructive structural test was conducted at the University of Waterloo, Waterloo, Ontario, Canada in the Department of Civil and Environmental Engineering Structures Laboratory to determine the maximum load capacity of a MakeABridge™ bridge system.

The specimen consisted of a 20 ft (6,1 m) long by 2 ft (0,61 m) wide aluminum pony-truss structure, fabricated using aluminum extruded sections and cast joints developed by MAADI Group. The size was reduced to fit the specimen in the U of W test frame.

The load was introduced via a “load tree” which consisted of two simply supported steel I-beams loaded to facilitate the splitting of the jack load (i.e., the total load) into three equal point loads, to be introduced at each of the three interior panel points of the truss. The three point loads were introduced via machined aluminum bearing pads. The specimen sat on two end supports, one pin and one roller.

→ [Watch the video](#)

## Test Data

This curve shows the initial linear behavior. Softening of the specimen occurs very gradually, making it difficult to identify a load coinciding with the onset of non-linear behavior. The peak total load obtained was 183 kN (41.0 kips). At this load, vertical deflection at the mid-span was approximately 61 mm.

The specimen exhibited some ductility beyond this peak load; final failure occurred at a total load of 157 kN (35.2 kips) and a mid-span deflection of approximately 80 mm.

Total load (kN) vs. Displacement (mm)

