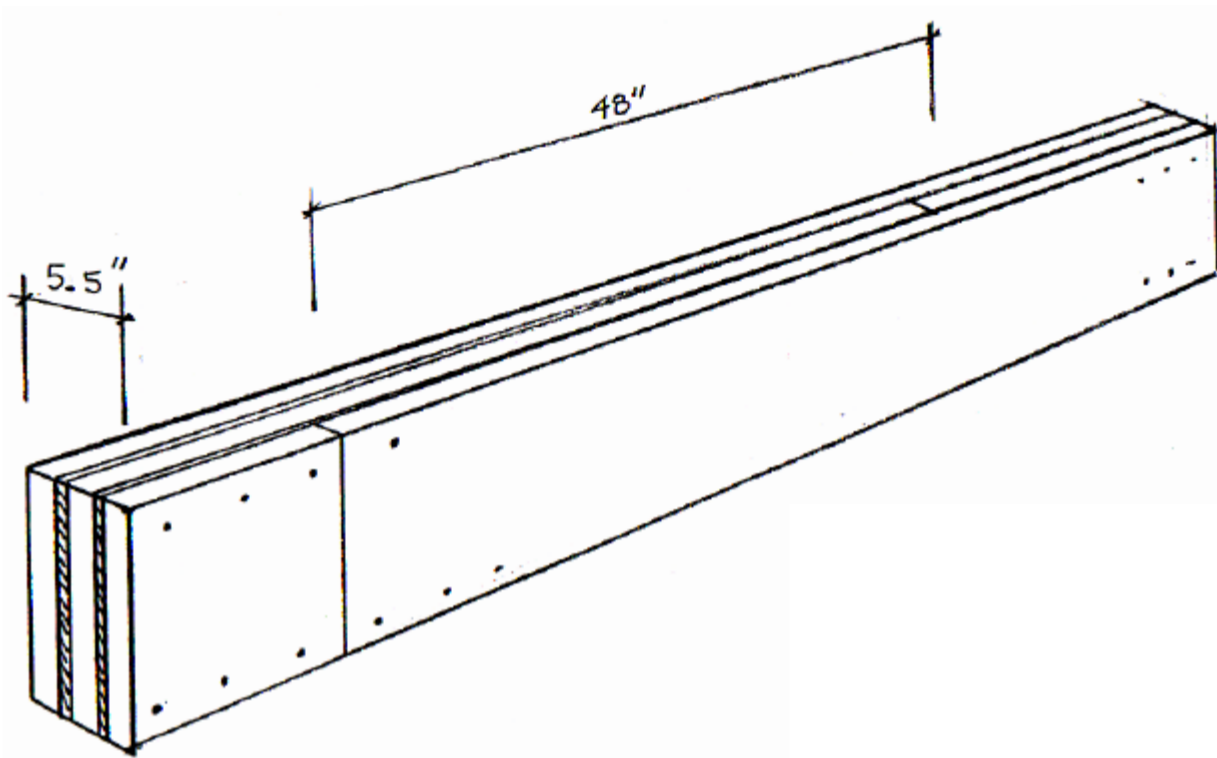


# THE BUILT-UP GIRDER OR BEAM

A sandwich you make for your house



While this is not an engineered beam and may not be approved by all inspectors, a careful builder can construct a strong and durable beam of almost any length from 2x joist lumber, plywood and construction adhesive. A three joist beam with 2x12's and two layers of 1/2" plywood as shown above will have roughly the same strength as a 6x12 beam of the same lumber and grade. It will also be the same width and can therefore use the same hardware such as post brackets, hangers and post caps.

Layout such a beam from straight solid lumber of reasonable length. Cut 8'rips of plywood for internal spacers. Assemble the beam by laying up 2x, plywood and 2x with each joint in the joists no closer than 4' from another joint. Plywood joints are not as critical but keep them at least 2' away from a joist splice. Run a line of construction adhesive between each layer. Space the galvanized nails approximately 4" to 6" apart in a staggered pattern 1-1/2" to 2" from both the top and bottom of the composite beam. Nail from both sides. Nails should be long enough to penetrate 1" deep into the last joist on the other side of the beam (5" for the beam above).

The glue and the nails pin the joists together and get them to work as a single unit much like a LVL beam (but not as pretty or with the guaranteed and tested strength of the LVL). 4x and 8x beams can be assembled in a similar fashion. PT lumber and plywood can be used for exposed conditions. Be sure to use compatible fasteners such as Zmax.