

frameX.us

## Bolts $\frac{1}{2}$ " Hardware store standard Grade 5 or Grade 8 bolts



Holes drilled will align through three or more laminated  $1\frac{1}{2}$ " lumber for upright posts to a span of  $4\frac{1}{2}$ " thus requiring at least a 5" bolt when used with two washers, or  $5\frac{1}{2}$ " bolt when utilizing a full sized locking nut for bolting the main sub-assemblies.

For the channel beams each clad with two  $1\frac{1}{2}$ " deep lumber which clad the  $3\frac{1}{2}$ " dimension of the posts for a total combined of  $6\frac{1}{2}$ " thus requiring at least a 7" bolt when used with two washers, or a  $7\frac{1}{2}$ " bolt utilizing a full sized locking nut bolting beams and sub-assemblies.