

Design (never-exceed) Loads

wing lift 150 lb @ 90 mph, CL=1.0
 root bend.mom. 2100 lb-in
 root cap load 2800 lb
 root cap area 0.030 in²
 cap stress 93 ksi
 web stress 215 psi (shear)

root torsion 19 lb-in
 root skin th. 0.094 in
 wing skin shear 40 psi

CST pre-cured prepreg strips

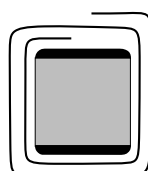
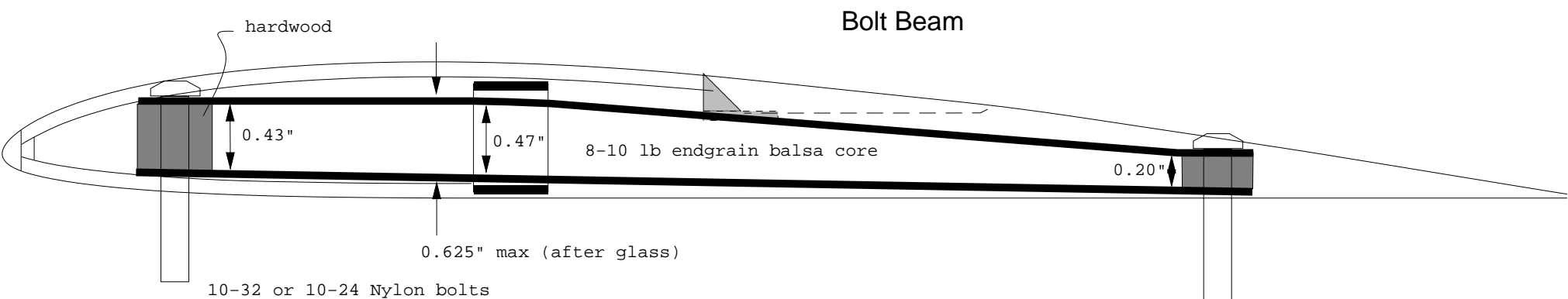
2x C1952 16.90 center 48" x 1/2" x 0.060" -> 0.014"
 2x C1914 9.30 mids 48" x 3/8" x 0.030" -> 0.014"
 1x C1134 2.95 top tips 48" x 1/4" x 0.014"
 2x C1034 4.30 bot tips 36" x 1/4" x 0.007"

\$ 33.45

Wing spar weights

caps 74 g (prepreg uni CF)
 core 54 g (7 lb endgrain balsa)
 wrap 7 g (Kevlar tow or thread, epoxy)
 rods 32 g (3/8" x 5.7" CF rods)
 boxes 32 g (brass tube, plywood, FG cloth)

199 g



round off beam corners to prevent glass fiber fracture

two layers
 2 oz bias glass,
 attach with 3M-77,
 soak with resin