

TIMBER BRIDGE DESIGN (BASED ON AASHTO LRFD (2007))

ADJUSTMENT FACTORS FOR REFERENCE DESIGN VALUES) (Sec 8.4.4)

$\phi := 0.85$	(8.5.2.2)
$F_{bo} := 24.9 \cdot \text{ksi}$	Bending Strength (from Timber Holdings Specifications)
$C_{KF} := \frac{2.5}{\phi} = 2.941$	Format Conversion Factor
$C_M := 1.0$	Wet Service Factor
$C_F := 1.0$	Size Factor
$C_{fu} := 1.0$	Flat Use Factor
$C_i := 1.0$	Incising Factor
$C_d := 1.0$	Deck Factor
$C_\lambda := 0.8$	Time Effect Factor
$F_b := F_{bo} \cdot C_{KF} \cdot C_M \cdot C_F \cdot C_{fu} \cdot C_i \cdot C_d \cdot C_\lambda = 58.588 \cdot \text{ksi}$	(8.4.4.1-1)

FLEXURE DESIGN (Sec 8.6)

$b := 8 \cdot \text{in}$	Width of beam
$d := 14 \cdot \text{in}$	Depth of beam
$S_{xx} := \frac{b \cdot d^3}{6} = 261.333 \cdot \text{in}^3$	Section modulus
$K_{bE} := 0.76$	visually graded lumber)
$E := 3250 \cdot \text{ksi}$	Modulus of elasticity
$L_U := 16 \cdot \text{ft}$	Distance between points of support