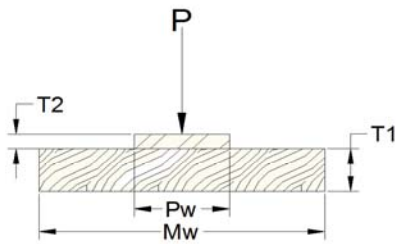
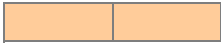
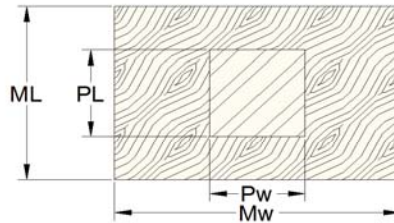


Timber Mat Design



ELEVATION VIEW



PLAN VIEW

P =	98.89	kips	Max Jack Reaction
M _w =	4	ft	Timber Mat Width
M _L =	4	ft	Timber Mat Length
TM _h =	8	in	Timber Mat Height
TM _b =	8	in	Timber Mat Base
P _w =	2	ft	Steel Plate Width
P _L =	2	ft	Steel Plate Length
T ₂ =	1.5	in	Steel Plate Thickness

$$F_{bry} = \frac{P}{M_w * M_L} = 6.181 \text{ ksf}$$

Pad Stress

$$M = \frac{w l^2}{2} = 12.36125 \text{ kip*in}$$

$$S = \frac{M_L * TM_h^2}{6} = 512 \text{ in}^3$$

$$F_B = \frac{M}{S} = 289.717 \text{ psi}$$

F_B = 1150 psi - For Mixed Oak Timber - Ref. NDS Basic Bending Strength

F_B' = C_DF_B - With C_D = 1.25 for Temp. Construction Loads (Table 2.3.2)

Check

$$F_B' = 1.25(1150 \text{ psi}) = 1437.5 > 289.717 \text{ OK}$$

Mat Design (Cont.)

Check Crushing Under Plate

$$F = \frac{P}{P_w * P_L} = 171.684 \text{ psi}$$

Check: Compression ⊥ Grain

$$F_c = 800 \text{ psi} > 171.684 \text{ psi} \quad \text{OK}$$