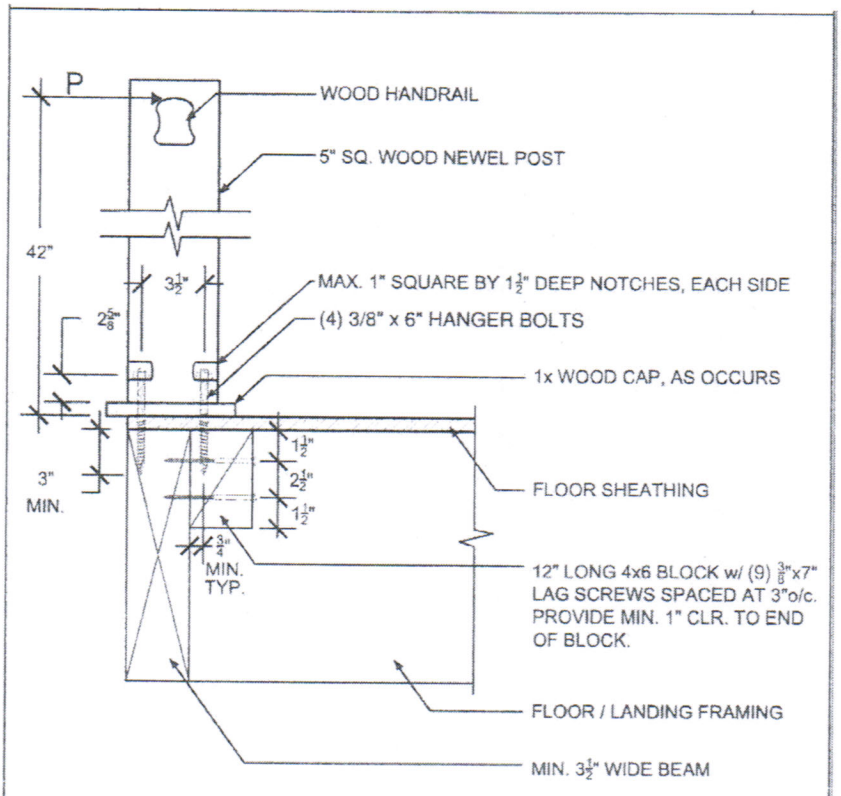

NEWEL POST CONNECTION | 2

P = 200#

Moment at Base, M = 200# * 39"
= 7800 #"

Tension on Bolt, T = 7800#" / 3.5" / 2
= 1114#

Check bearing on plate washers

Washer size = 1" square

Washer Area
= (1)(1) - 3.14(.5)(.5)/4
= 1 - 0.196
= 0.804 sq. in.

Allow. Bearing Capacity = 1500 psi

Allow. Compression = 1500 * 0.804
= 1206 #

1206# > 1114#.....OK

CHECK HANGER BOLTS IN TENSION

Thread Length = 3"

Allow. Tension = 305 #/in.*1.25 (Refer to Table 11.2A of the 2005 NDS)

Allow. Tension on Bolts = 381 * 3 = 1144# > 1114# .....OK!

CHECK 3/8"x7" LAGS IN SHEAR AT BLOCK

Shear, V = 1114#, Embedment = 3-1/2"

$V_{allow\ (1\ lag)}$ = 130# (Refer to Table 11J of the 2005 NDS)

Required Number of Lags, N = 1114/130 = 8.6 ..... **Use (9) Lags!**