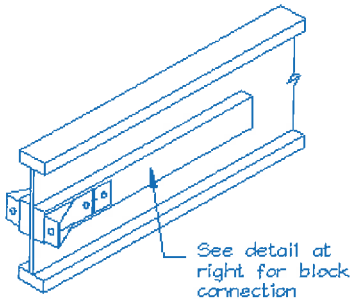
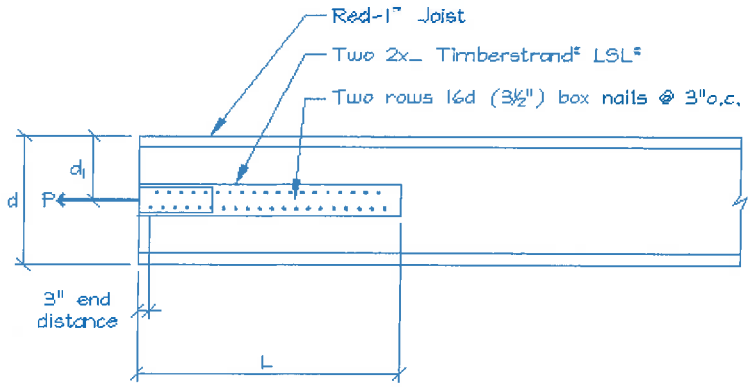
LARR 25833 ATTACHMENT

Seismic Tie Connection to Red-I™ Joist Webs

Seismic tie connections to Red-I™ Joists may be made through the use of bolted hold down anchors and transfer blocks attached to the web of Red-I™ Joists as detailed below.

Design of the attachment of the transfer blocks to the Red-I™ joist web is based on the nail capacity in double shear with the transfer blocks and the Red-I™ joist web, determined in accordance with the procedures of ANSI/AF&PA NDS 2015, National Design Specification for Wood Construction. Minimum 1.5 inch thick, 1.3E grade or higher TimberStrand® LSL transfer blocks are required on both sides of the web, and nailed with two rows of 16d box nails. The total number of nails required shall be determined as shown below.





To determine the length of TimberStrand® LSL block:

1. Find: $L_1 = \frac{0.75(KP)d_1}{C_D V_A - [V_{DL} + 0.75V_{LL}]}$

2. Find: $L_2 = {}^{3n}/_{2} + 3$

   Where, $n = \frac{P}{(V_n C_D)}$

3. Use the maximum of L_1 or L_2 for the minimum length of the TimberStrand® LSL block

C_D = Load duration factor
d_1 = Distance to axial load from top of joist, in.
K = 0.6 for wind; 0.7 for seismic (accounts for strength-based load)
n = Number of nails
P = axial load, lbs.
V_{all} = Allowable Red-I™ Joist resistive shear, lbs.
V_{DL} = Shear load due to gravity dead loads, lbs.
V_{LL} = Shear load due to gravity live loads, lbs.
V_n = Shear capacity of 16d box nail, lbs. (V_n@100% DOL = 107, 124, 142 lbs for $^3/_8$", $^7/_{16}$", ½" Red-I™web thickness)