### ERRATA to the 2018 and Prior Editions of
the National Design Specification® (NDS®) for Wood Construction

<table>
<thead>
<tr>
<th>Page</th>
<th>Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>166</td>
<td>Clarifies that the following calculations in Example E.7 Sample Solution of Row of Bolts is intended for a single-row bolted connection with a 3-1/2” thick main member and 1-1/2” thick side member:</td>
</tr>
</tbody>
</table>

**E.7 Sample Solution of Row of Bolts**

Calculate the net section area tension and row tear-out adjusted ASD design capacities for the single-shear single-row bolted connection represented in Figure E2.

**Main and Side Members:**

#2 grade Hem-Fir 2x4 lumber. See NDS Supplement Table 4A – Visually Graded Dimension Lumber for reference design values. Adjustment factors $C_D$, $C_T$, $C_M$, and $C_i$ are assumed to equal 1.0 in this example for calculation of adjusted design values.

- $F_{t'} = 525$ psi ($C_T) = 525(1.5) = 788$ psi
- $F_{v'} = 150$ psi

**Connection Details:**

Bolt diameter, $D$: 1/2 in.

Bolt hole diameter, $D_h$: 0.5625 in.

Adjusted ASD bolt design value, $Z_{||'}$: 550 lbs

(See NDS Table 12A for 3-1/2” main member thickness and 1-1/2” side member thickness. For this trial design, the group action factor, $C_g$, is taken as 1.0).

Adjusted ASD Connection Capacity, $n Z_{||'}$:

$$nZ_{||'} = (3 \text{ bolts})(550 \text{ lbs}) = 1,650 \text{ lbs}$$

Adjusted For side member, adjusted ASD Net Section Area Tension Capacity, $Z_{NT'}$:

$$Z_{NT'} = F_{t'} [w - n_{row} D_h]$$

$$Z_{NT'} = (788 \text{ psi})(1.5''\cdot 3.5'' - 1(0.5625'')) = 3,470 \text{ lbs}$$

**Figure E2 Single Row of Bolts**

![Figure E2 Single Row of Bolts](image)

**Adjusted For side member, adjusted ASD Row Tear-Out Capacity, $Z_{RT'}$:**

$$Z_{RT'} = nF_{v'} t_{critical}$$

$$Z_{RT'} = 3(150 \text{ psi})(1.5')(2') = 1,350 \text{ lbs}$$

In this sample calculation, the adjusted ASD connection capacity is limited to 1,350 pounds by row tear-out, $Z_{RT'}$. 