THE PRYING CHECK PROCEDURE can be intimidating for rst-time users.

There are many variables and equations in the procedure, which is presented in Part 9 of the 14th Edition of the AISC , and the controlling limit state may not always be obvious.

For those that have struggled with this procedure, a paper has been posted on AISC's website that presents a different way to view the prying checks in the . You can view the complete paper at **www.aisc.org/pryingcheck**. But for a summary of what it discusses, read on.

Increasing Strength

Prying may mistakenly be viewed as a aw in a connection, a limit state that weakens the connection when the opposite can be true. As stated on page 9-11 of the : "Alternatively, it is usually possible to determine a lesser required thickness by designing the connecting element and bolted joint for the actual effects of prying action with greater than zero." One should view prying as a way to increase the strength of a con-

$$= \phi \quad = \phi \quad = \phi \left(\frac{^2}{4}\right) \leq$$

If the rst model is not suf cient to transfer the load, then prying can be considered. The additional strength that can be added to can be calculated as follows:

The load that can be carried based on the formation of the second hinge is calculated.

$$= \phi \quad = \phi \left(\frac{(\ - (\ ))^2}{4}\right)$$

The strength of bolt must also be considered:

$$= \frac{-}{\left(1 + \frac{'}{}\right)}$$

The available strength gained by considering prying is the lesser of the bolt strength and the angle strength:

$$= \begin{cases} \\ \end{cases}$$

The total available strength of the connection is the sum of these:

$$= \quad +$$

where:

= width of the hole along
the length of the tting, in.
= tributary length, in.
= the available strength per bolt, kips.

Note that if is less than , prying does not need to be considered. The connection is suf cient considering only one hinge.

The checks are summarized in Figure 4.

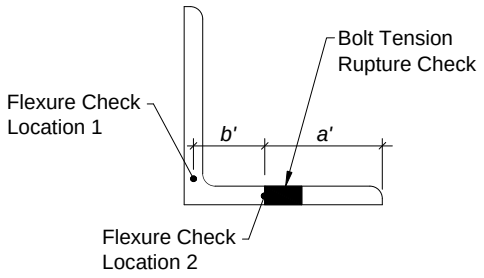

Figure 4. Limit states being checked.

The paper posted online goes into greater detail about this approach and provides a few examples. View the complete paper at www.aisc.org/pryingcheck. ■