This XS sheet is for the placement of transverse shear keys for new hinges. The keys are designed to be replaceable if necessary. Every hinge should have a minimum of two keys. The designer will determine how many total keys are needed. The amount of keys necessary can be determined following the Seismic Design Criteria (SDC) Section 7 (7.2.3.3); “The transverse shear key demand at the hinge shall be taken as the smaller of the sum of the over-strength shear demands of the columns in the bents adjacent to either side of the hinge”.

Each key section has an estimated shear capacity of 585 kip.

\[
V = 0.58 \times A \times f_u
\]

\[
A = 17.4 \text{ sq. in., } f_u = 58 \text{ ksi}
\]

\[
V = 0.58 \times 17.4 \times 58 = 585 \text{ kip}
\]

The location and total amount of HSS keys needed should be shown on the contract plans. The keys should be placed symmetrically and as best as possible to the longitudinal alignment of the structure. The keys should be placed parallel to each other to avoid binding during normal thermal movement of the bridge.