

## CODE

- (b) Anchor spacing  $s$  is at least 65 mm.
- (c) Reinforcement is provided at the corners if  $c_{a2} \leq 1.5h_{ef}$
- (d) For anchor groups, the strength is calculated based on the strength of the row of anchors farthest from the edge.

**17.7.2.3 Breakout eccentricity factor,  $\psi_{ec,V}$** 

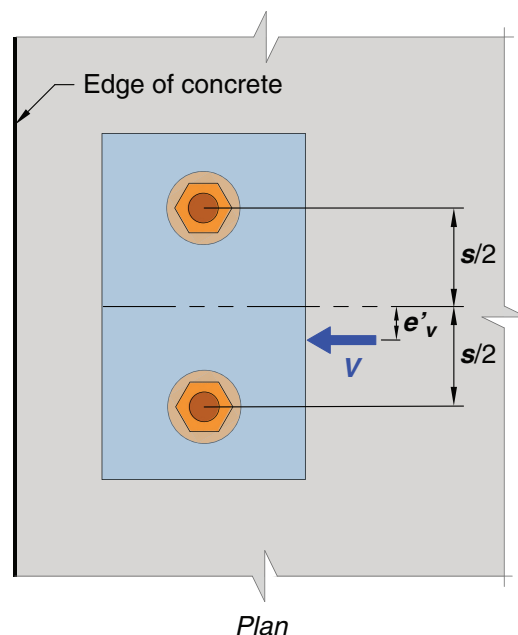
**17.7.2.3.1** Modification factor for anchor groups loaded eccentrically in shear,  $\psi_{ec,V}$ , shall be calculated by Eq. (17.7.2.3.1).

$$\psi_{ec,V} = \frac{1}{\left(1 + \frac{e'_V}{1.5c_{a1}}\right)} \leq 1.0 \quad (17.7.2.3.1)$$

## COMMENTARY

**R17.7.2.3 Breakout eccentricity factor,  $\psi_{ec,V}$** 

**R17.7.2.3.1** This section provides a modification factor for an eccentric shear toward an edge on an anchor group. If the shear originates above the plane of the concrete surface, the shear should first be resolved as a shear in the plane of the concrete surface, acting in combination with a moment that may or may not also cause tension in the anchors, depending on the normal force. Figure R17.7.2.3.1 defines the term  $e'_V$  for calculating the  $\psi_{ec,V}$  modification factor that accounts for the fact that more shear is applied to one anchor than others, tending to split the concrete near an edge.



**Fig. R17.7.2.3.1**—Definition of  $e'_V$  for an anchor group.

**17.7.2.3.2** If the loading on an anchor group is such that only some of the anchors in the group are in shear, only those anchors that are in shear in the same direction shall be considered for determining the eccentricity  $e'_V$  in Eq. (17.7.2.3.1) and for the calculation of  $V_{cbg}$  according to Eq. (17.7.2.1b).

**17.7.2.4 Breakout edge effect factor,  $\psi_{ed,V}$** 

**17.7.2.4.1** Modification factor for edge effects for single anchors or anchor groups loaded in shear,  $\psi_{ed,V}$ , shall be determined by (a) or (b) using the lesser value of  $c_{a2}$ .

- (a) If  $c_{a2} \geq 1.5c_{a1}$ , then  $\psi_{ed,V} = 1.0$  (17.7.2.4.1a)