CODE

COMMENTARY

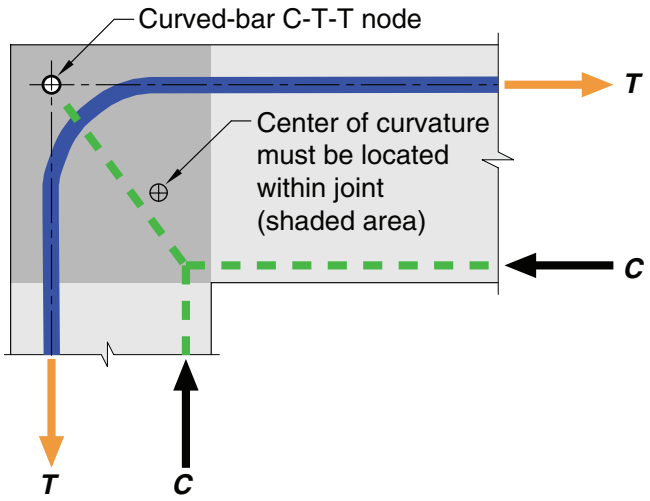

***Fig. R23.10.5**—Permissible zone for the center of curvature of a curved-bar node at a frame corner.*

23.10.6 ℓ_{cb} shall be sufficient to develop any difference in force between the straight legs of the bars extending from the bend region.

R23.10.6 Tie forces are unequal where the strut (or the resultant of two or more struts) does not bisect the angle formed by the ties at each end of the bend. Figure R23.10.6 shows a curved-bar node where the difference in tie force is developed in the bend region/nodal zone. Radial compressive stress acting on the node varies, and circumferential bond stress develops along the bar.

The difference in force between the two ties extending from the bend is developed over the length of bend ℓ_{cb} (the arc length of bar between ***c*** and ***b*** in Fig. R23.10.6). The following equation for ℓ_{cb} may be used at 90-degree corners:

$$\ell_{cb} > \ell_d(1 - \tan\theta_c)$$

where θ_c is the smaller of the two angles between the axis of the strut (or the resultant of two or more struts) and the ties extending from a curved-bar node, and ℓ_d is the development length calculated in accordance with 25.4.2.2 or 25.4.2.3 using the applicable modification factors of 25.4.2.4.