NOTE: AT EXPANDABLE ENDWALLS WHERE RAFTER FLANGE BRACING IS REQUIRED AT BOTH SIDES OF THE RAFTER (AT THE TIME OF EXPANSION), THOSE FLANGE BRACES ARE INCLUDED & MUST BE INSTALLED AT THE TIME OF THE EXPANSION

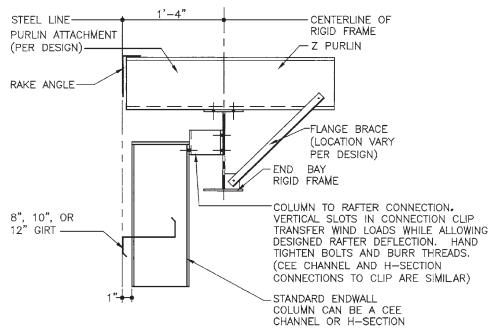


FIGURE 4.25 Endwall framing at rigid frame with Z purlins and flush girts. (Nucor Building Systems.)

- **3** Why is flange bracing required at the bottom flanges of frame rafters?
- **4** Which factors make achieving full column fixity at the base difficult?
- **5** How are endwall columns attached to end rafters?
- **6** Which primary frame system always uses straight columns?
- **7** What advantages are offered by trussed frame rafters?
- **8** How can torsion be relieved in an endwall-column-to-rafter connection?

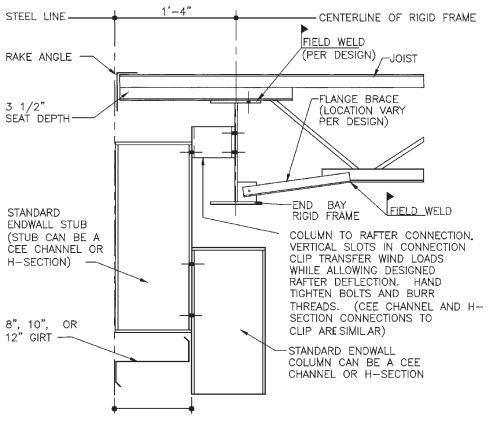


FIGURE 4.26 Endwall framing at rigid frame with open-web joists and bypass girts. (Nucor Building Systems.)