There is an exception where initial inelastic response of an OMF is permitted to occur in beam-to-column connections. This is for OMF provided with partially restrained (PR) moment connections. Requirements for PR moment connections are covered in Section E1.6c.

Design and detailing requirements for OMF are considerably less restrictive than for IMF and SMF. The OMF provisions are intended to cover a wide range of moment frame systems that are difficult or impossible to qualify as IMF or SMF. This includes, for example, metal building systems, knee-braced frames, moment frames where the beams and/or columns are trusses (but not STMF), moment frames where the beams and/or columns are HSS, etc.

OMF Knee-Brace Systems. Knee-brace systems use an axial brace from the beam to the column to form a moment connection. Resistance to lateral loads is by flexure of the beam and column. These systems can be designed as an OMF. The knee-brace system can be considered as analogous to a moment frame with haunch-type connections. The knee brace carries axial force only, while the beam-to-column connection carries both axial force and shear. A design approach for knee-braced systems is to design the beam-to-column connection, the braces, and the brace end connections for the forces required to develop $1.1R_yM_p/\alpha_s$ of the beam or column, or the maximum moment that can be delivered by the system, whichever is less. M_p is the plastic flexural strength of the beam or column at the point of intersection with the knee brace. The column and beams should be braced out of plane, either directly or indirectly at the knee brace locations, consistent with the requirements of *Specification* Appendix 6.

OMF Truss Systems. In some moment frame configurations, trusses are used for the beam elements in place of rolled shapes. These systems can be designed as a special truss moment frame (STMF) following the requirements of Section E4. Alternatively, these systems can also be designed as an OMF where OMF are allowed by ASCE/SEI 7 (ASCE, 2016). As an OMF, a design approach would be to design the truss and the truss-to-column connections for the maximum force that can be transferred by the system, consistent with the requirements of Section E1.6b(b). The maximum force that can be delivered to the truss and truss-to-column connections can be based on the flexural capacity of the columns, taken as $1.1R_yM_p/\alpha_s$ of the column, combined with vertical loads from the prescribed load combinations. Thus, the intent is to design a weak column system where inelasticity is expected to occur in the columns. The column should be braced out of plane, either directly or indirectly at the location of the top and bottom chord connection of the truss, consistent with the requirements of Appendix 6 of the *Specification*.

4. System Requirements

Unlike SMF, there is no beam-column moment ratio (i.e., strong column-weak beam) requirement for OMF. Consequently, OMF systems can be designed so that inelasticity will occur in the columns.