

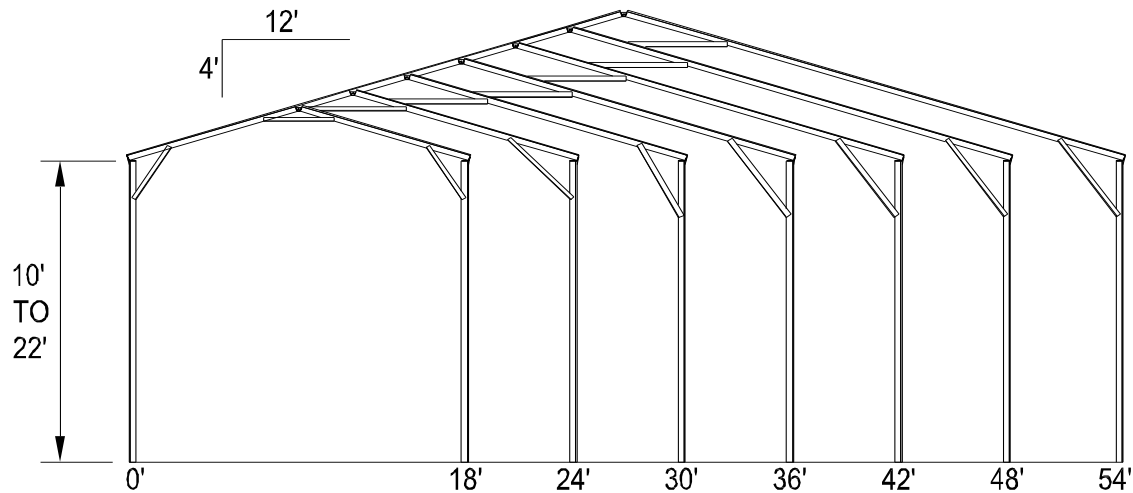
Kelly's larger buildings use a 4:12 pitch gable roof structure with one of two structural systems:

- Trussed roof with shear walls
- Repetitive moment frames with knee and ridge braces

The gabled moment frames with knee and ridge braces is the standard framing system. It has the most interior clear height and because of the repetitive individual frames, can be used to make a

theoretically infinite length building.

The trussed roof and shear walls configuration is an alternate method of framing the larger buildings. It is often used in cases where knee braces interfere with the building use or where very high design (wind & snow) loads make the knee and ridge brace configuration impractical.



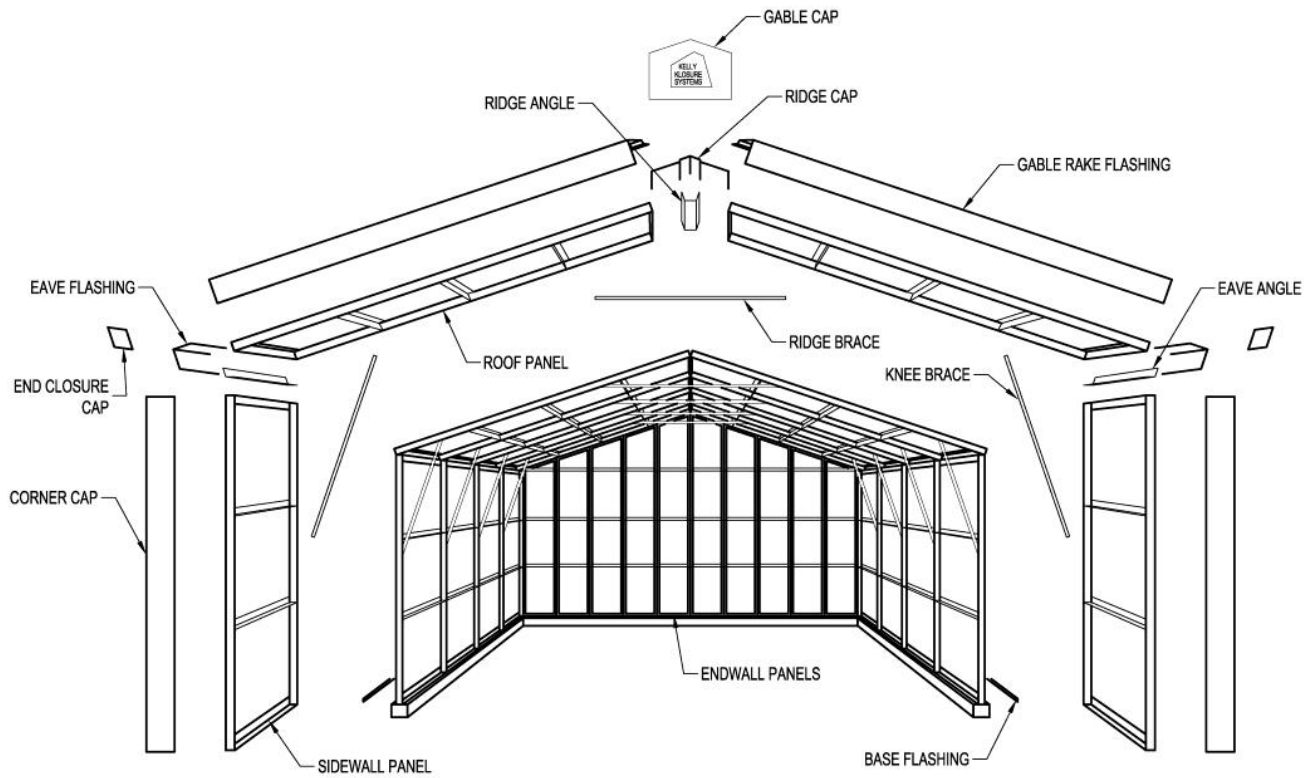
Large Buildings Pre-Engineered Sizes
(Repetitive Moment Frames Shown, Custom Sizes Available)



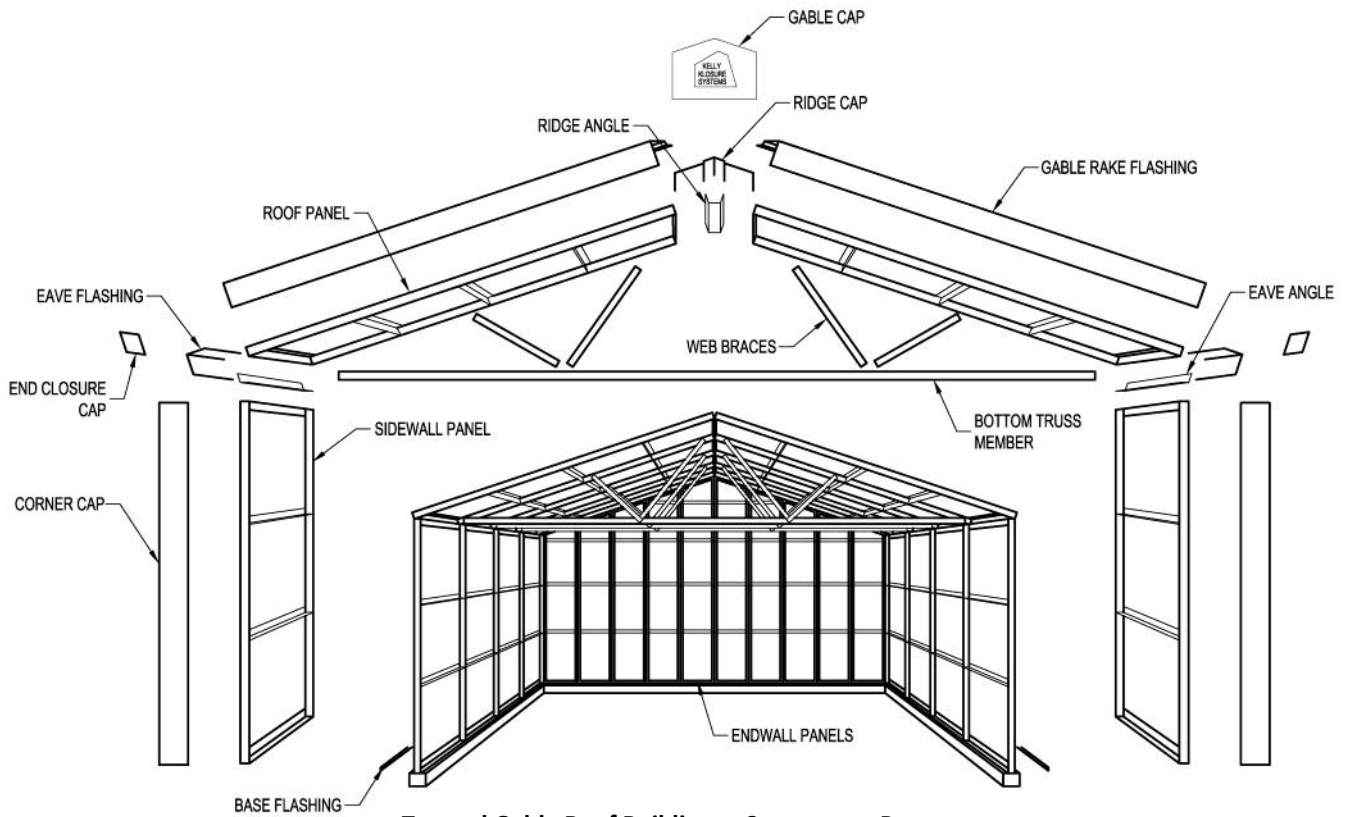
54' Wide Building
Using Trussed Roof Structure



42' Wide Building
Using Repetitive Moment Frames (Knee and Ridge Braces)



Repetitive Moment Frame Buildings - Component Parts



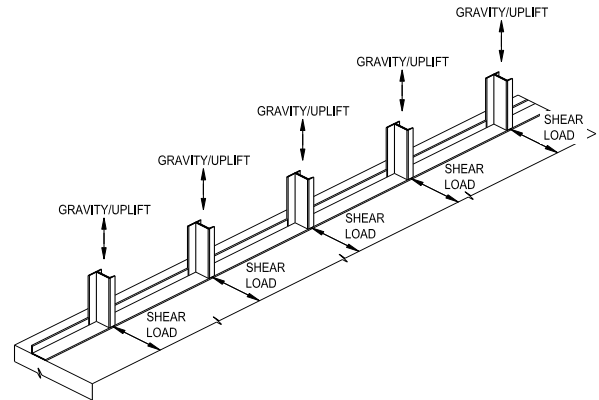
Trussed Gable Roof Buildings - Component Parts

The primary load-resisting element used in the structural design of larger Kelly Klosure buildings is a moment frame created by the hot rolled angle/channels forming the long sides of each wall or roof panel and supplemental pin connected knee and ridge braces as illustrated. Therefore, sidewalls and roof panels form the structural backbone or spine of Kelly's larger "repetitive moment frame" 4:12 pitch gable buildings.

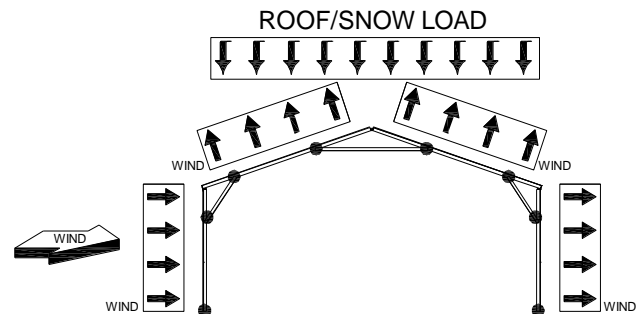
Wall and roof panels are constructed from high-grade hot-rolled structural angle and/or channel shapes. Panel sizes range from 3" angle and channel up to 5" angle and channel for our standard pre-engineered building sizes. For custom or heavily loaded structures, 6" channel can also be used as the panel frame member. Equipment door jambs and base channels (for temporary foundations) can use up to a 12" steel channel or tubing depending on the need.

The connection of wall and roof panels at the eave and ridge and the bolted knee and ridge braces create pinned base moment frames spaced at the joint of every 3' wide panel with the next adjacent panel. Their base reactions are therefore delivered at 3' intervals. This makes the uniform foundation loads like those created by tilt-up concrete or masonry load bearing construction, except Kelly building panel loads are lighter. In other words, the structural system foundation requirements are simpler because Kelly Klosure structures transfer relatively uniform loads around the perimeter – not heavy point loads – to their foundations. Large rigid frame point loads are typical of conventional pre-engineered metal buildings. Kelly building's foundation design loads are relatively light even for the tallest, most heavily loaded structures.

The repetitive moment frames on 3'-0" centers also allow for a Kelly building to be of theoretically infinite length.



Base Reactions at Sidewall of
Building with Repetitive Moment Frames



Building Reacting to Wind & Snow Loads
Showing the Pinned Moment Frame