

Precast "Y" Frames at Barry M Goldwater Terminal Four

A distinguishing feature of the Barry M. Goldwater Terminal Four complex at the Sky Harbor International Airport, Phoenix, Arizona, is the "Y" frame system around the perimeter of the building. Four levels of parking are constructed above the terminal and extend beyond the terminal walls to cover the adjacent upper level roadway bridges. Because of this configuration, unique "Y" shaped concrete structures were designed to support the parking floors above as well as the roadway. These "Y" shaped frames transfer loads from the parking garage columns that are spaced 30 feet on center to the elevated roadway columns below that are spaced 90 feet on center. A typical frame measures 68 feet wide by 30 feet tall. Each frame was precast on site in one piece, was post-tensioned, and was lifted into place by cranes. Some frames weighed up to 180 tons. It was estimated that this procedure saved two months construction time over casting the frames in place or using several precast pieces in each "Y" frame. Estimated cost savings were between \$500,000 to \$1,000,000.

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