

Design Column Boundary Conditions in Slenderness Calculations

When the slenderness effects for a non-sway frame column is considered in creating a model using [spColumn](#), the effective length factor can be computed by defining the properties of the columns and beams connected to the top and bottom of the design column. The following notes are helpful when using [spColumn](#) to calculate the k value for some of the special boundary conditions cases:

- To model pin supports at the top and bottom of the design column:

“No column specified” for column above and column below

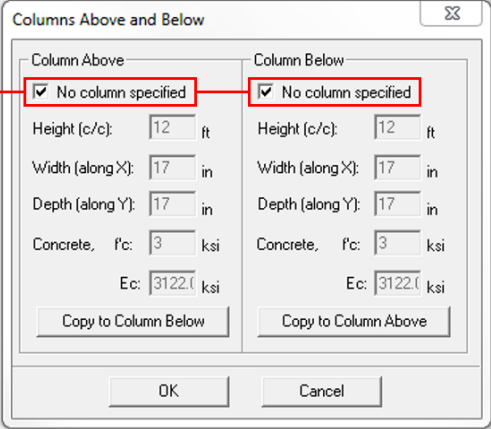
“No beam specified” for beams above and below

- To model fix supports at the top and bottom of the design column:

“No column specified” for column above and column below

Define a high moment of inertia value for one of the beams at the top and bottom.

3. To model pin support at the top and fix support at the bottom of the design column:



Columns Above and Below

Column Above: No column specified

Column Below: No column specified

Height (c/c): 12 ft

Width (along X): 17 in

Depth (along Y): 17 in

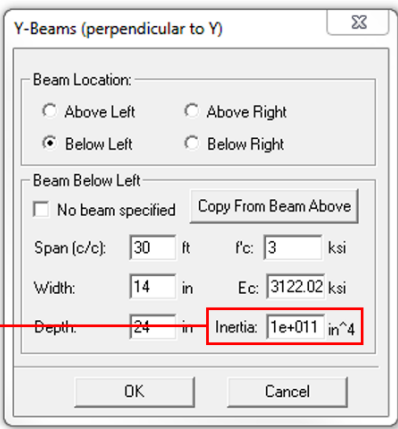
Concrete, f_c: 3 ksi

Ec: 3122.1 ksi

Copy to Column Below

Copy to Column Above

OK Cancel



Y-Beams (perpendicular to Y)

Beam Location:

Above Left Above Right

Below Left Below Right

Beam Below Left:

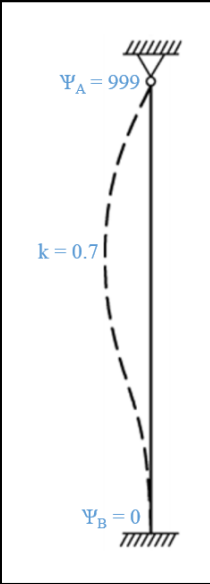
No beam specified

Span (c/c): 30 ft f_c: 3 ksi

Width: 14 in Ec: 3122.02 ksi

Depth: 24 in **Inertia: 1e+011 in⁴**

OK Cancel



$\Psi_A = 999$

$k = 0.7$

$\Psi_B = 0$

"No column specified" for column above and column below
Define a high moment of inertia value for one of the beams at the location of the fix support. "No beam specified" for beams at the location of the pin support.