

## 12\_10 COGO Incomplete Alignment - Ramps With Compound Spiral

### Question:

Do you have any example of a COGO incomplete input file with a compound spiral? I have to tie an exit ramp to a mainline curve.

### Answer:

There are two interpretations for the definition of "Compound Spirals". Here is the definition from Roadway Design Manual.

- Compound Spirals should be used between two curves if the radius of one curve is twice the radius of the second curve.
- Compound Spirals should also be used on all interstates, freeways, expressways, arterials, and on ramps in interchange areas as the preferred method to change superelevation rates.

The **traditional interpretation** insinuated that there are two spirals deflecting the same direction between two curves. Closely related to the definition of a compound curve.

The **modern interpretation** and predominately practiced method, only one spiral element exists and joins the two curves. Mostly appearing at the beginning of ramp alignment.

These two interpretations are valid and are heavily dependent on where the beginning of the proposed alignment. This write-up assumes the beginning of the ramp alignment begins on an offset Mainline curve (modern interpretation). If the beginning of the proposed ramp alignment falls on an offset distance to a Mainline spiral element (traditional interpretation), then simply include two spiral statements at the beginning of the Incomplete Alignment script.

Below is the link to the sample COGO Incomplete Alignment input file for ramp alignments with compound spirals. There is also a line by line breakdown of what the COGO input file does and a diagram to compliment. Please use this as a reference only. Values such as curve radii and lengths of spiral are made up for this demonstration purposes only.