- **Vertical:**
- If your return requires a curb return profile in the plans, make sure the horizontal and vertical are named properly for export to Geopak.
- You need to determine the tie elevations and grades at each end.

    Method 1: Use "Quick Profile from Surface". This will only work if your corridor has not been trimmed at all yet, and overlaps the radial section.
    Method 2 (best): Use "Profile By Slope from Element" from both baselines using the roadway cross slope. This should work very well unless you're in a super transition.
    Method 3: View the profiles of the immediate upstream and downstream EPs. Use Quick Profile from Surface from the corridor to get elevation and slope at your radial tie.
    If tying to existing ground, you can draw a temporary line beyond the tie and view its existing ground profile to get the slope of existing ground at the radial tie.
    Method 4: You can use the "Quick Profile Transition" tool, which will automatically tie. This usually does not give what you want, and does not work well if not set up well.

- Draw the proposed profile using normal means that ties smoothly at the ends with the right elevation and slope.
- You need to come off the tie slopes very slowly, since the radial return typically starts very close to the travelway (can get very steep easily).
    If Method 2 was used above (as recommended) you use can follow the baseline as long as possible to create a smooth transition.
- Vertical curves should be used, but only need to meet a low speed (15-25 mph). K= 3-12 for crests and K= 5-14 for sags, or less if very low volume (private).
- Of course, make sure to set your proposed profile as the active profile, once drawn.

Create Surface Template:

The next step is to actually create the intersection pavement. Make sure you have all the required elements (see above). You need lines that define the horizontal and vertical (make sure there is an active profile) for the entire boundary of your warped intersection area. You will also want a crown line (**(6)** above) to warp out the crown smoothly and ensure that your through movement will be modeled as profiled.

1. In your project's template library, create a copy of a pavement structure template (like Asphalt Concrete w/ Aggr. Base - 1 Ln) and modify as necessary.
2. Use Terrain Model->Create from Elements. Set Feature Type to Boundary, Edge Method to None, Feature Definition to (Surface-Boundary?) and give it a logical name. Select all boundary elements (**(1)**, **(2)**, **(3)**, **(4)**, **(5)**) to create the terrain model.
3. Use Terrain Model->Add Features. Set Feature Type to Break Line and select the trimmed piece of connection centerline **(6)**.
4. In 3D Geometry, use the Apply Surface Template tool. Select the Terrain Model just created and choose No for "Apply External Clip Boundary". Choose the template just created.