Civil 3D 2016 – Corridor Assembly Frequency. Advanced Features

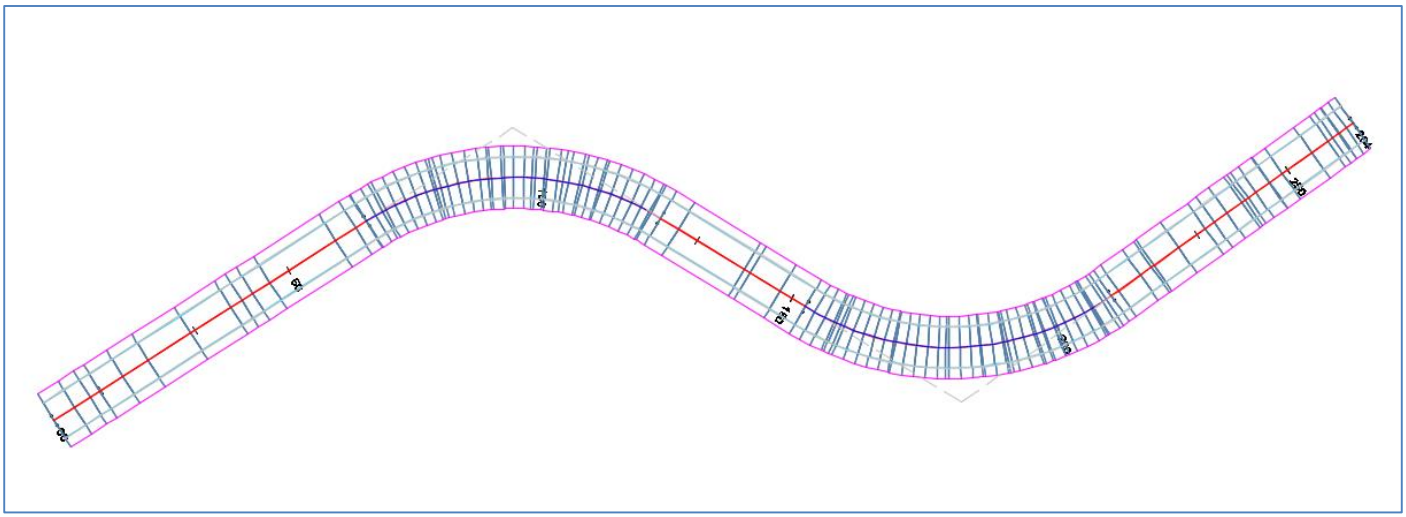
How to control the application of assemblies in a corridor

Introduction

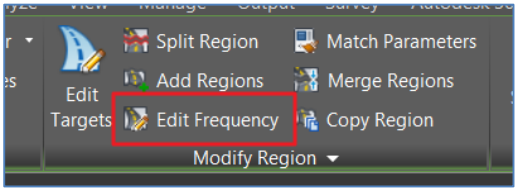
When designing corridors in Civil 3D the user has control over the interval that assemblies are applied. In some complex cases, such as when alignment contains large and small radii curves, a single assembly interval for all curves might not be appropriate. This white paper explains some of the advanced techniques.

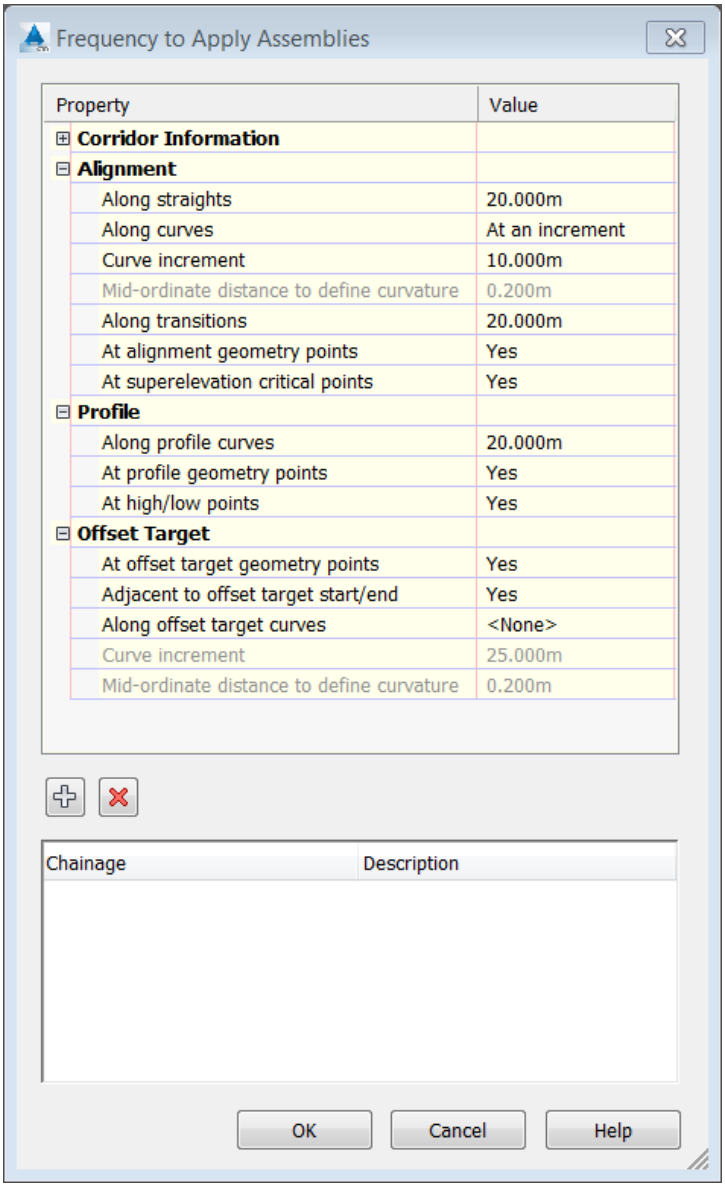
Simple Case

In the example below the alignment contains two radii of similar size and the assemblies have been applied using the default settings.



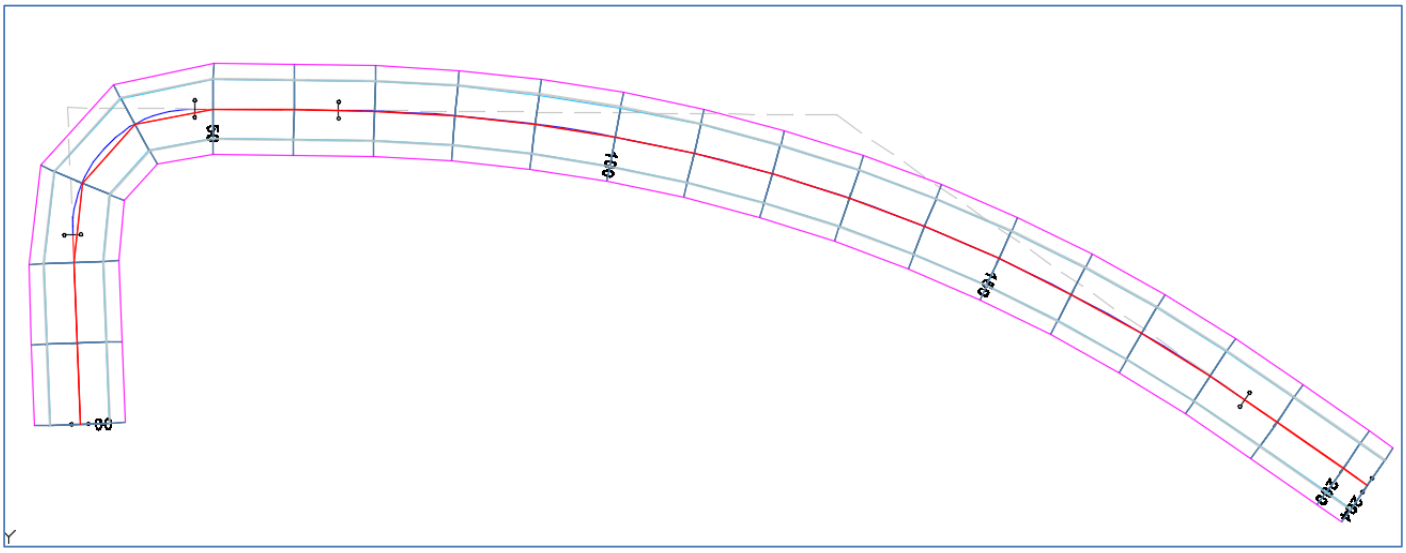
To display the assembly frequency panel, select the corridor then select 'Edit Frequency' from the contextual menu.



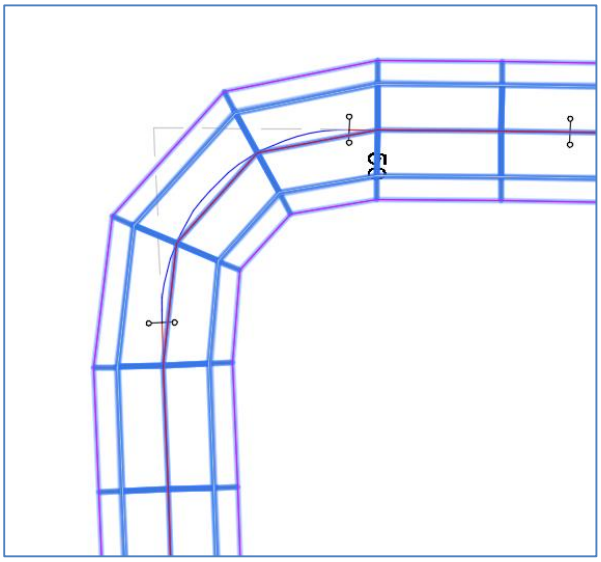


You will see that the defaults are set to apply assemblies 'at an increment' along curves at 10m intervals and at 20m intervals on straights, transitions and profile curves.
Assemblies are also applied at various key geometry points (e.g. high/low points, alignment geometry points etc.)

In the next example the alignment contains one large radii and one small one:

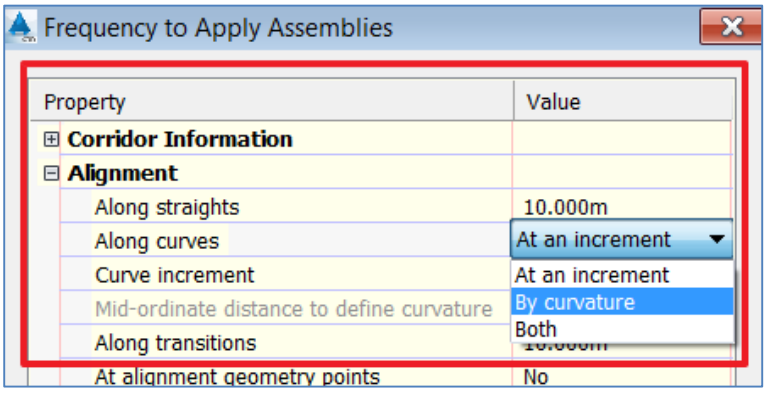


In this case all the intervals have been set to 10m and the extra geometry points have been turned off for clarity but you will notice that a 10m interval for the small curve gives an inadequate definition for the corridor:

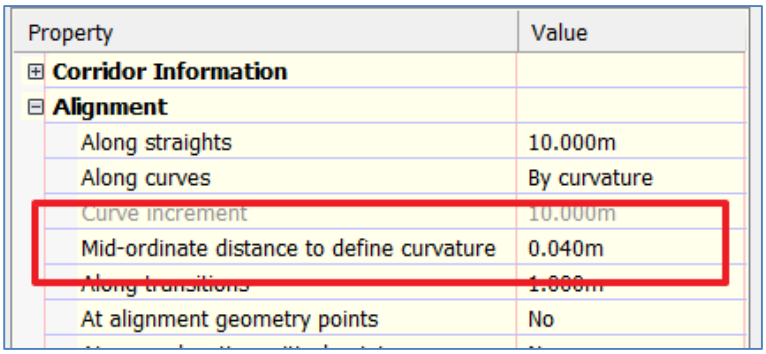


One solution to this problem is to set different intervals for different corridor regions but this is time consuming and not dynamic should the design alignment change radically.

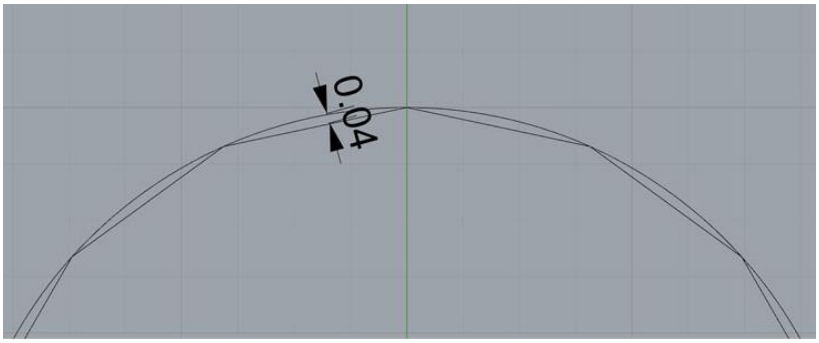
A better solutions is to set the frequency 'Along Curves' to 'by curvature'



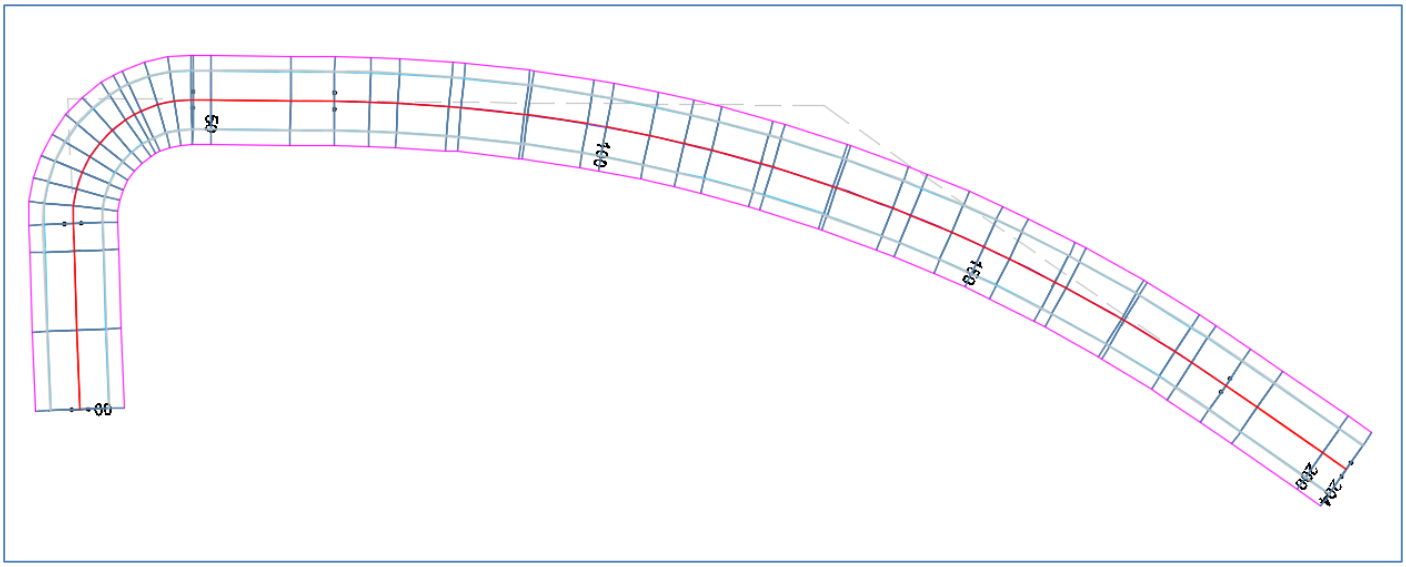
Then set the 'Mid-ordinate distance to define curvature' to reasonably small value (0.04 in this case)



The Mid-ordinate distance used above is a measurement between the curve and the chord of the curve between two intervals e.g:



The result of using this method is that mid-ordinate distance will give a closer interval on smaller radii and a larger interval on large radii as shown below



If the ‘Along curve’ is set to ‘Both’. You can use a combination of both a mid-ordinate check and regular interval.