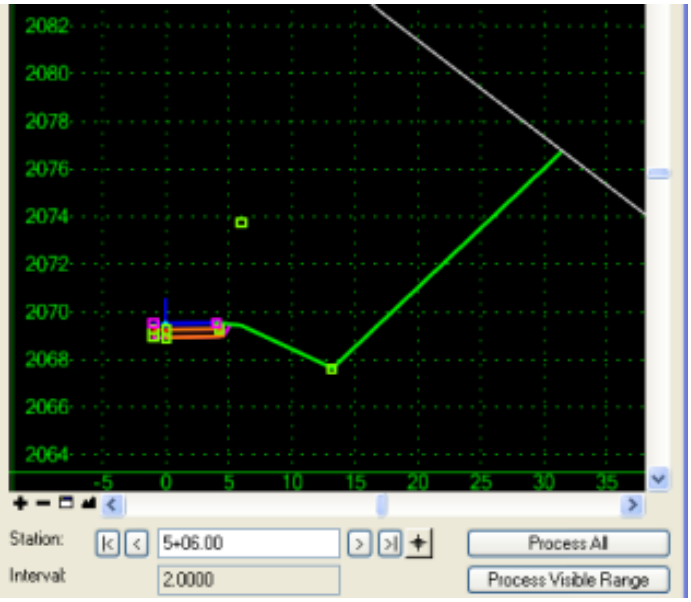
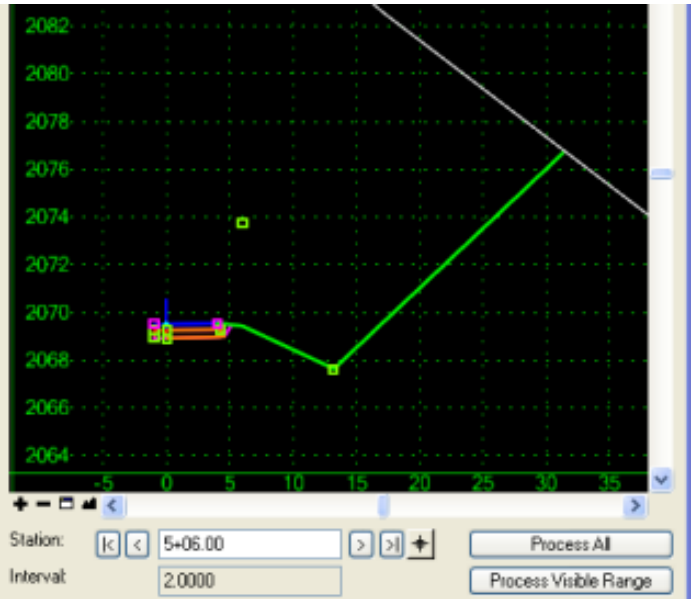
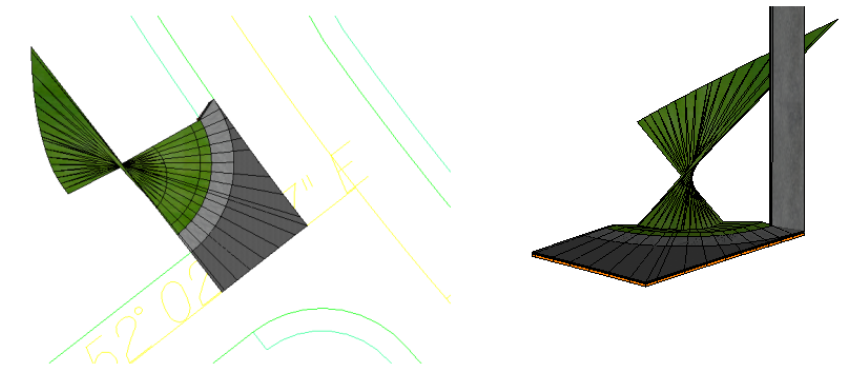
8_2 SLOPE STAKE LIMITS SURPASSING CENTER OF CURVATURE

Question:
I have a mountain project with an intersection in a deep cut, so the slopes in the model overlap each other. How can resolve this problem?

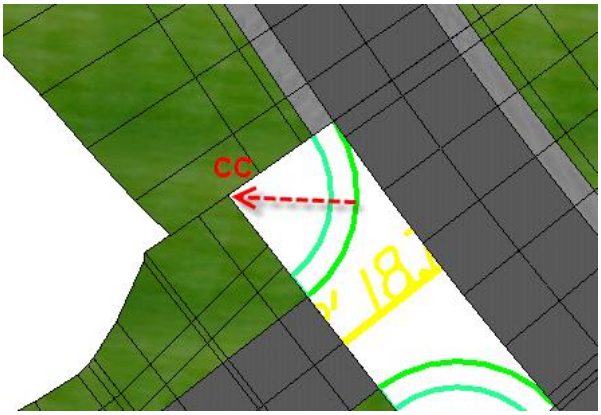


Answer:
This situation is usually caused by the slope stake limits surpassing the center of curvature on sharp curves. It can occur in deep cuts or high fills. A twisted helix formation is formed in the model as a result.

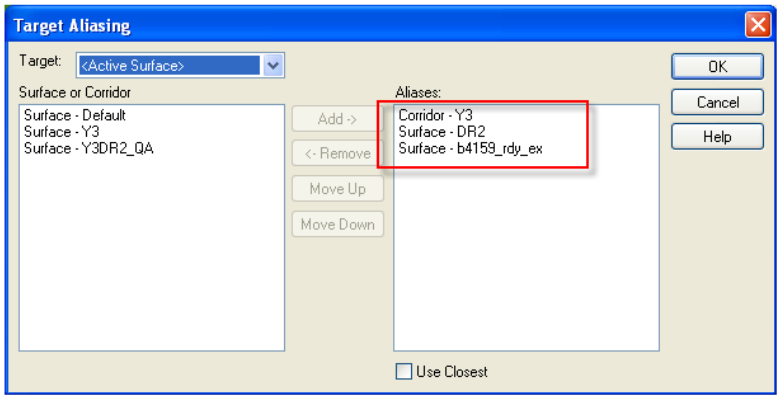


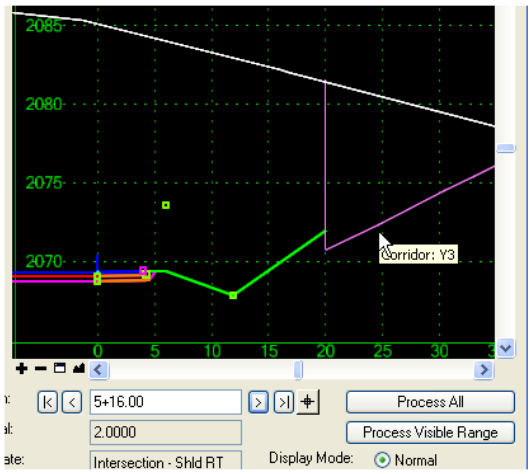


With help from Bentley, we have found a way to fix this issue. At a typical intersection where the slope stake limits fall beyond the center of curvature, laying out the two intersecting corridors reveals the CC point where all slopes must tie to.

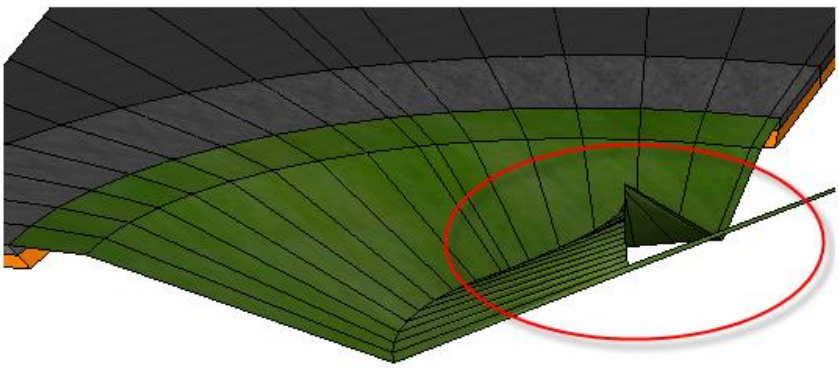


Use target aliasing to determine the approximate location of the CC.

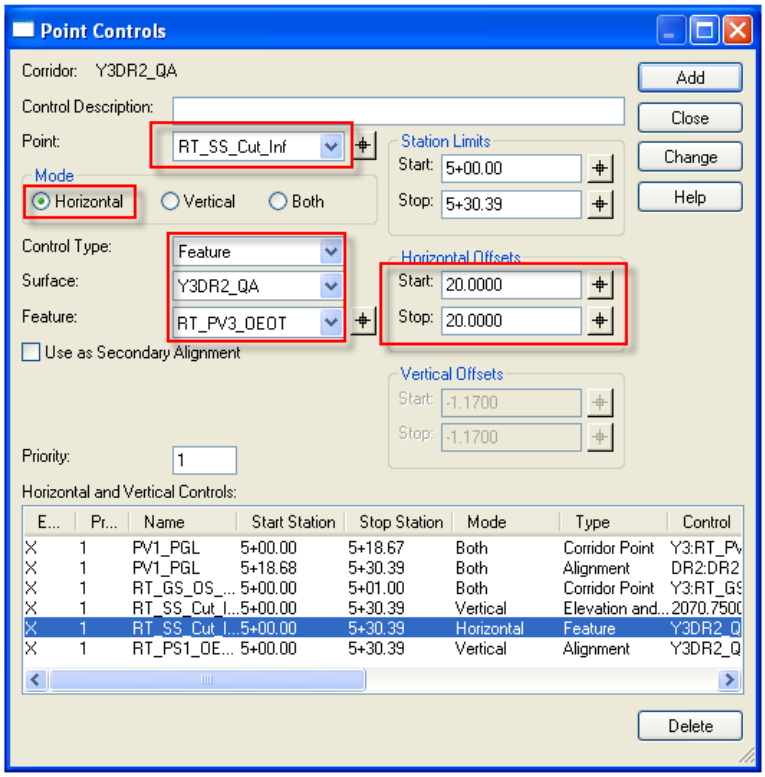




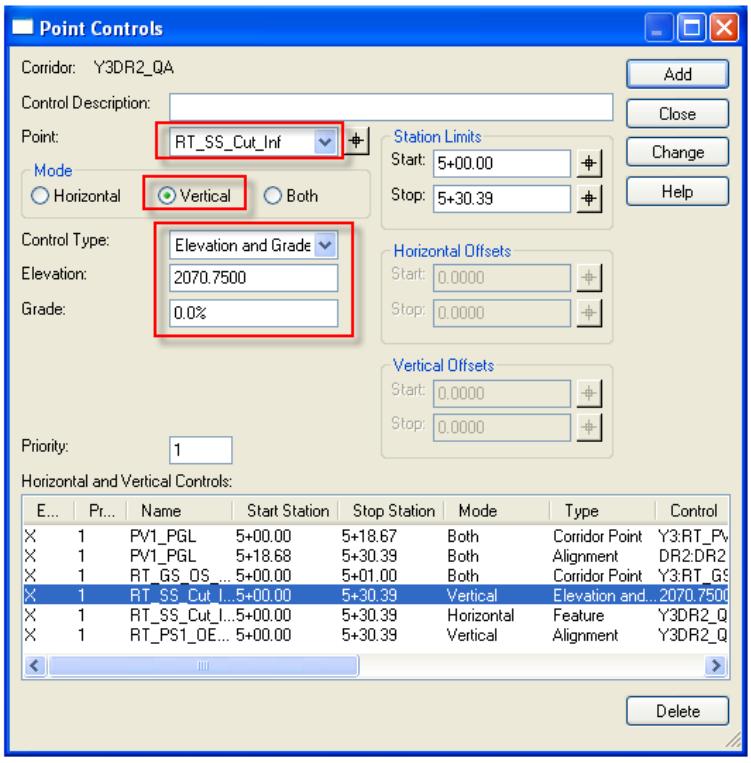
However, with target aliasing alone there still seems to be a helix formation with elevation difference near the CC.



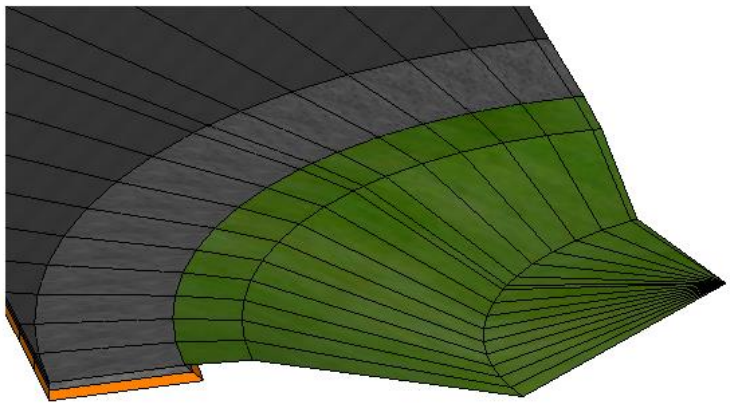
To really get an accurate model, the CC point must have one common elevation. Two key point controls are needed to achieve the desired smoothed effect. First the slope stake points must all end at the CC horizontally. At this intersection, the radius for the curve return is 20'.



Secondly the slope stake points must tie to one common elevation vertically. The common elevation can be computed from the model or inside Roadway Designer. To tie the slope stake points to a common elevation, use the "Elevation and Grade" control type under Point Controls and set the grade to 0% for all of the template drops.



Now every slopes are tied down perfectly to the CC vertically and horizontally.



Use point controls for the surrounding corridors to make the model even smoother.