# ORD Design Guidelines

Guidelines to Follow During Design:

1. **Point names should be the same from template to template if points are to create one feature definition.** Points dropped in each template create longitudinal feature definitions which, for the integrity of component display, should be continuous. Points with the same name from one template drop to the next, will automatically connect to create a continuous feature definition. "Use Feature Name Override" in the point properties assists in creating one feature for an end condition catch line even when the successful catch slope varies.
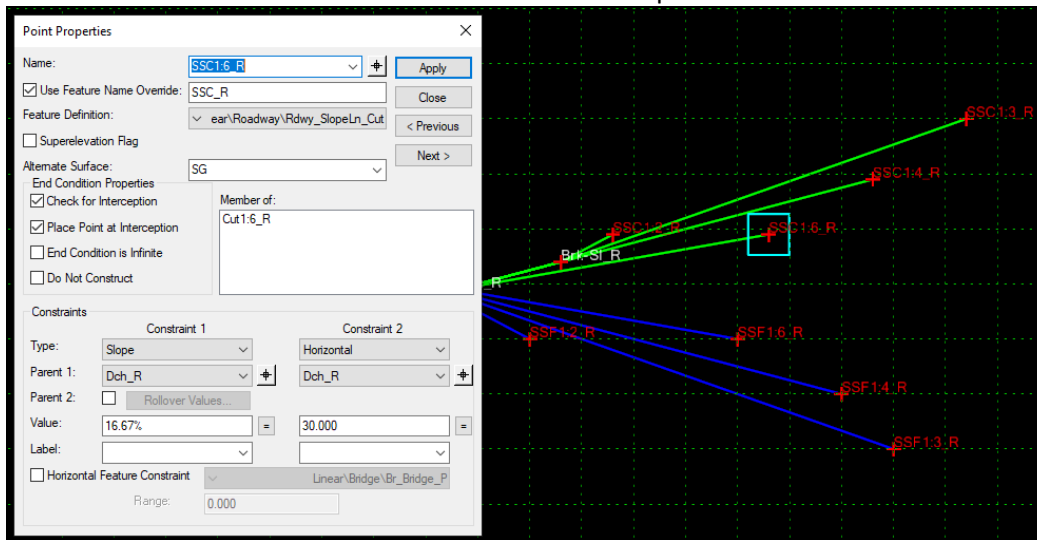
2. **Points (feature definitions) should not cross.** Template points should maintain the same relative position in every template. If template A has points EP_L, CL, and EP_R, in that order from left to right, and template B has points in order CL, EP_L, EP_R, then the resulting feature definitions will cross, one of the feature definitions will not be triangulated and the 3D feature definition will not be drawn, the surface will be determined incorrectly, and the components will lack integrity and may not be drawn. *Template position, parametric constraints, or point controls both horizontally and vertically can cause crossing feature definitions.*

3. **Components should contain the same point members (with the same names) from one template to another.** Another way to say this is, if the component is made up of different points in template B than in template A, then the component in template B should have a different name. Attempting to connect components from one template drop to another, when the components have different feature definition membership causes a lack of component integrity and the component may not be displayed. *If component membership changes on subsequent templates, give the component a unique name.*

4. **Enable and define template transitions when template point names change.** When point names are not used in template B, that are present in template A, and the transition is not defined, the feature definition will abruptly stop at the last interval drop of template A, leaving a gap. A component that relies on a feature definition that ended early, will not be drawn across the gap. *Abrupt changes in templates (over 0.1 feet or less) may be used instead of enabling transitions.*

5. **Name point names uniquely in different templates when the triangulation needs to change, when the relative location (horizontally or vertically) of the point changes, or when the point name is not used for a station range.** If a point name must end before the end of the corridor and another point in the same location must be reintroduced later in the corridor - **those points should have unique names.** During corridor processing, as a template point moves along a geometry, it will attempt to create a <u>continuous</u> 3D linear feature definition of the same name. If the feature definition has discontinuities - the component defined by those feature definitions may lack integrity and may not be displayed. ***Although a feature definition may have discontinuities, it may only be either triangulated or non-triangulated for its entire length.*** If the relative location changes, crossing feature definitions could be introduced which affects the integrity of the triangulated surface. An example is using a template that performs shoulder widening and then transitioning to a template that performs full-depth construction all the way across. The geometry will be applied at the origin point in each template (0,0), but you would not want a CL feature definition to be created or triangulated in the widening section. The centerline point name in the widening section should be a null point and not use the same name as the CL point on the wearing course in the full-depth template. Create two different centerline feature definitions by changing the centerline point name in the widening template to CL-null.