

Constraints and Controls, Order of Processing

The order of processing should tell you which type of constraint ends up controlling your point. When a template drop is processed at each station, the order below is used to determine point locations.

1. Template Location – x,y location in the template. Template locations can be modified by any higher order process.
2. Template Point Constraints – How the point is constrained to other points in the same template or component – horizontal, vertical, slope, etc. The point constraints override the template location during processing of the corridor and maintain a relationship between points to cause your components to retain a particular shape. A point may have a template location and no point constraints. That point then acts independently of all of the other points; which is typically not a good thing. The best practice is to fully constrain all template points to one or two main points.
3. Parametric Constraints – A label that may be given a specific value, which is applied during the processing of the corridor. The label's value may be altered in the Corridor Objects Parametric Constraints, which will dynamically override the default value and the template location.
4. Point Controls – These are used in corridor processing to modify the behavior of points in a template. Point controls take precedence over other constraints. Superelevation is one type of point control. Point controls can be applied on any point in a template, even in end conditions. The point control will override the template constraint of the same type. For example, if a ditch point is constrained Horizontal, Slope to the subgrade shoulder and a vertical point control is applied – the ditch foreslope is what will be modified. Why? Because the only vertical constraint available for override is the vertical part of the slope constraint. To maintain the ditch foreslope and change the point's elevation using the point control, modify the horizontal template constraint on the ditch point to be a vertical template constraint.
5. Component Display Rules – Things like Parent Components are solved based upon the current position of all points. Establishing a parent component is the simplest of display rules. One example is assigning a sidewalk component a parent that is an end condition; if an end condition exception is used to produce backbone only, the sidewalk will also not display.
6. End Conditions – Finally, these are the last to be solved, by extending the segments along their specified slopes to seek their targets.

If point controls are applied correctly, they override parametric constraints and template constraints.
