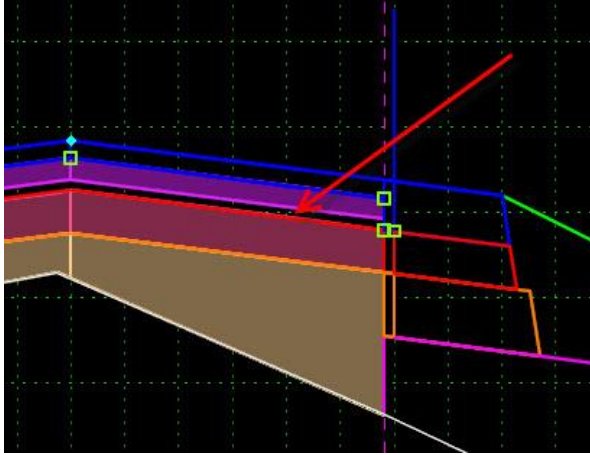


6_6 SURFACE COURSE WEDGING AND COMPONENT DEPTH

Question:

I am having issues in the areas of wedging for the surface course. There are sometime gaps (picture below) or overlaps in the pavement layers causing the wedging quantity input files to process incorrectly. Can you explain how wedging for the surface course is designed to work?



Answer:

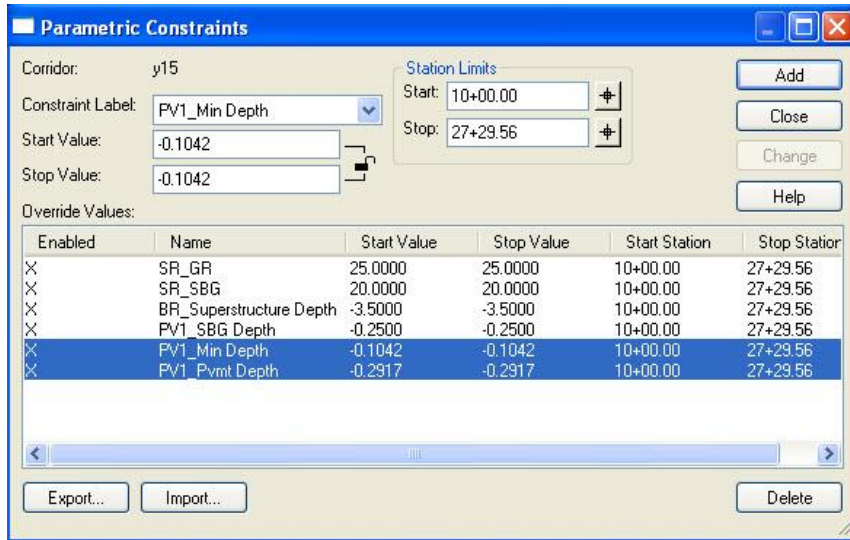
When wedging, there are three independent controls for the surface course (pavement layer 1); the total surface course depth, the minimum surface course depth, and the surface course wedging component depth.

LAYER 1 MINIMUM	LAYER 1
LAYER 1 WEDGE	
LAYER 2 WEDGE	LAYER 2
LAYER 3 WEDGE	LAYER 3

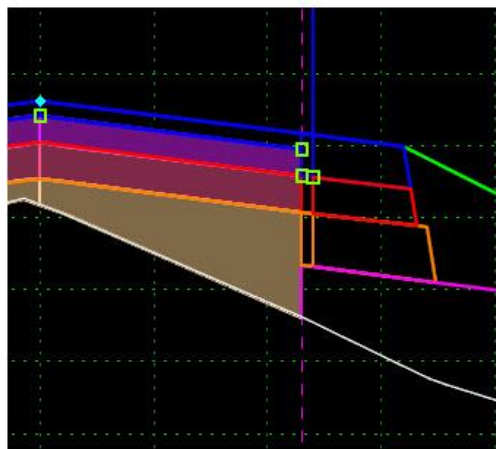
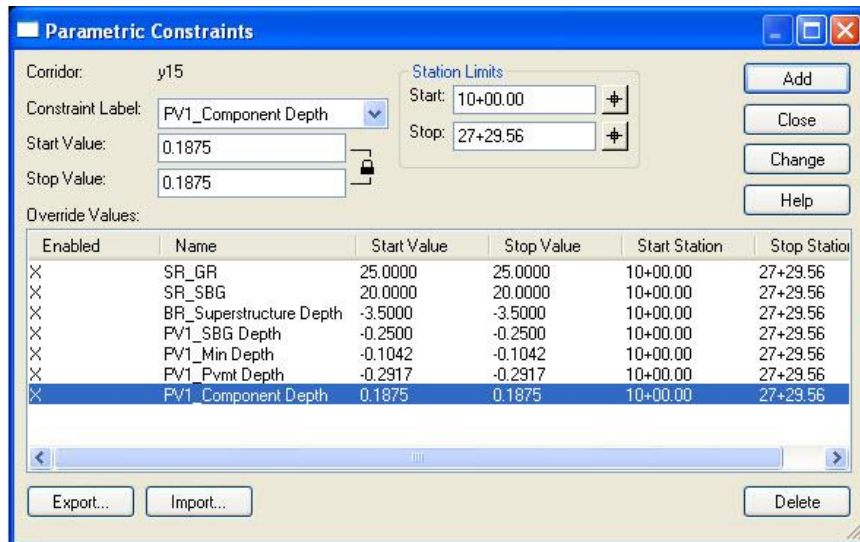
Make sure Layer 1 Minimum and Layer 1 Wedge depths equal the total Layer 1 depth geometrically. In terms of parametric constraints, the expression can be written as:

- $PV1_Pvmt\ Depth = PV1_Min\ Depth + PV1_Component\ Depth$

In the above case, the surface course depth (PV1_Pvmt Depth) is -3.5" and the minimum surface course depth (PV1_Min Depth) is -1.25".



We need to change the wedging component depth parametric constraint (PV1_Component Depth) for the surface course to 2.25" to be geometrically the same as the total pavement depth for the surface course (1.25 + 2.25 = 3.5). Note since the component depth is an absolute value, it is always positive.

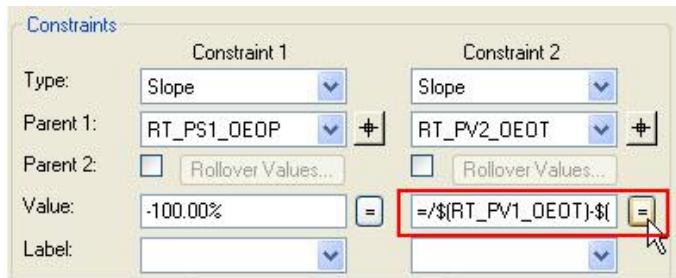


For further details on component depths and how wedging layers 2 and 3 are automatically adjusted (no confusing math involved), see the below link.

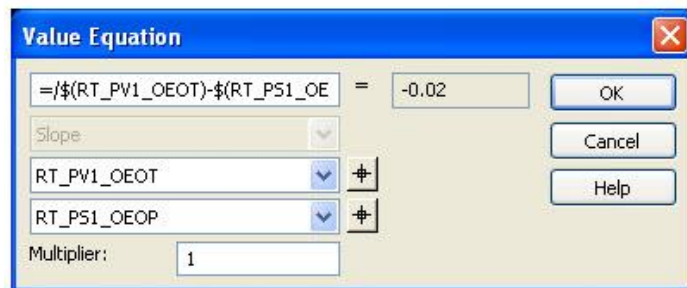
12' Lane Typical Pvmt Layers

Note:

One solution is to have the ability to write an equation to vary the component depth. Currently we can write an equation to set a varying horizontal, vertical, or slope value between two points.

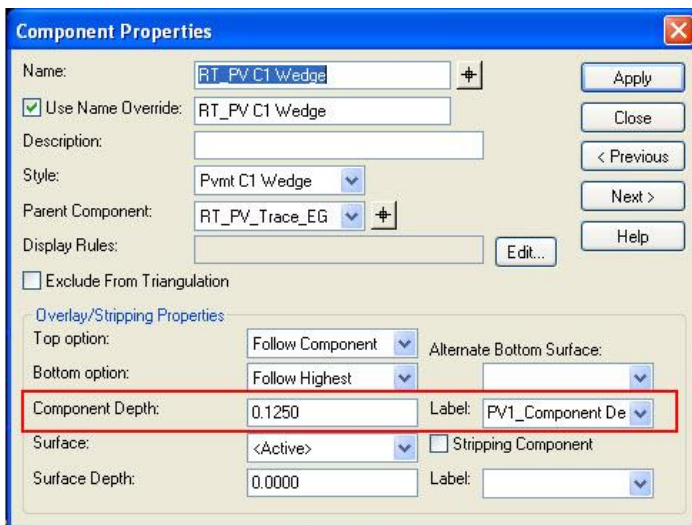


The screenshot shows the 'Constraints' dialog box with two constraint columns. Constraint 2 is selected, and its 'Value' field contains the equation $=/$(RT_PV1_OEOT)-$(RT_PV1_OEOT)-$!$. A red box highlights this equation, and a mouse cursor is pointing at the equals sign.



The screenshot shows the 'Value Equation' dialog box. The equation $=/$(RT_PV1_OEOT)-$(RT_PV1_OEOT)-$!$ is entered in the top field, and the result is -0.02 . Below the equation, the variables RT_PV1_OEOT and RT_PV1_OEOP are listed with dropdown arrows and plus-minus symbols. The 'Multiplier' is set to 1. Buttons for 'OK', 'Cancel', and 'Help' are on the right.

The same capability does not exist for component depths.



The screenshot shows the 'Component Properties' dialog box. The 'Name' is 'RT_PV C1 Wedge'. Under 'Overlay/Stripping Properties', the 'Component Depth' is set to 0.1250, and its label is 'PV1_Component De'. A red box highlights the 'Component Depth' field and its label. Other fields include 'Top option' (Follow Component), 'Bottom option' (Follow Highest), 'Surface' (<Active>), and 'Surface Depth' (0.0000).

We have submitted this enhancement request to Bentley and hopefully it will be included in future release of corridor modeling.