



Creating Curved Channel Segments with the ADVANCED CHANNEL DESIGN Program

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The ADVANCED CHANNEL DESIGN program has the ability to create curved channel segments.

1. In the PLN Tab, start an empty PLN and enable Arcs from this sheet.

FIGURE 1. Enabling Arcs in your Channel Plan

This opens more tabs down the left side of the ADVANCED CHANNEL DESIGN program for left and right toes.

2. Enter the coordinates for the toes and know the radius in which to bend the channel segments.

FIGURE 2. Defining the Toes

The channel in this example is a south-to-north channel. To bend the right toe north, the radius will be a negative value. The left toe will be a positive value to send the toe southward to create arc segments on both sides of the channel as shown in Figure 3.

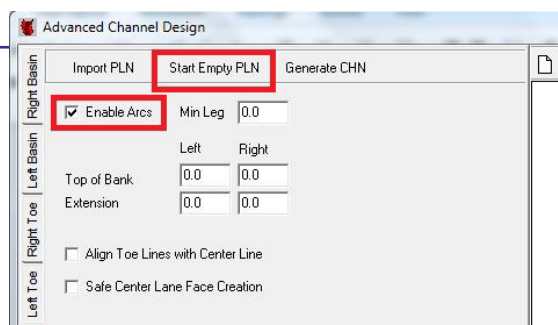
FIGURE 3. 3D View of a Channel with Curved Side Slopes

You can verify that your channel is created correctly by opening up the 3D window and viewing your channel in either the right or left toe tabs.

To rotate the model simply use the cursor in this window to click and drag it around.

To exaggerate the vertical scale, use the Page Up and Page down keyboard functions.

In Figure 4, the Nodes window shows that the number of nodes that are created increases substantially because of the number of segments required to make the curve. *Be careful with very long stretches of channel as it can become a very large CHN file with many faces.*



Advanced Channel Design						
	Ins	Cut	Pst	Fill Col	Offset From Center Line	Load From File
	X	Y	Z	Slope	Radius	
1	1084358.00	6683796.00	40.00	2:1	-750.0	
2	1083682.00	6684057.00	40.00	2:1	0.00	
3	1083094.00	6684759.00	40.00	2:1	0.00	
4	1081379.00	6686004.00	40.00	2:1	0.00	
5						
6						
7						
8						
9						

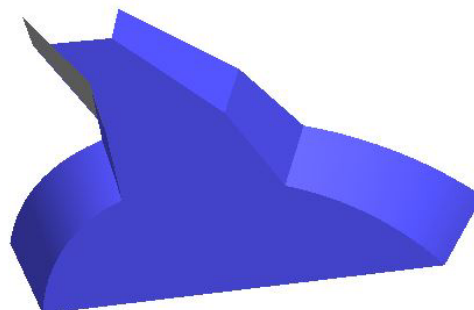
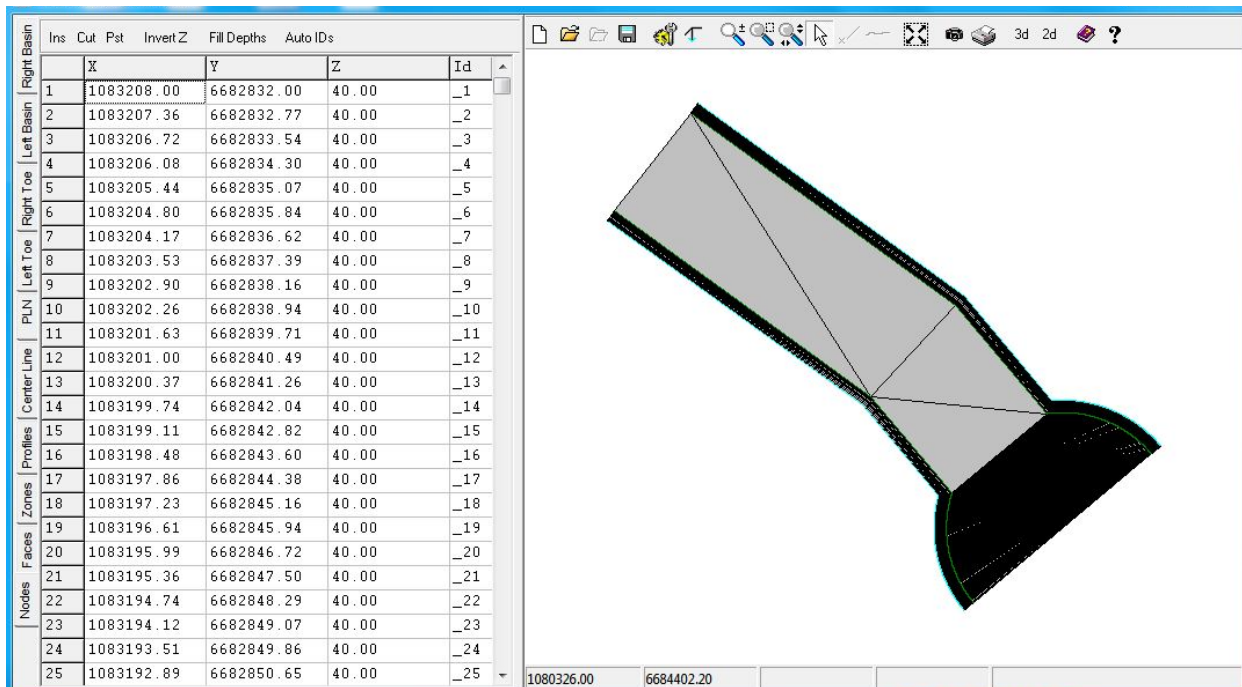


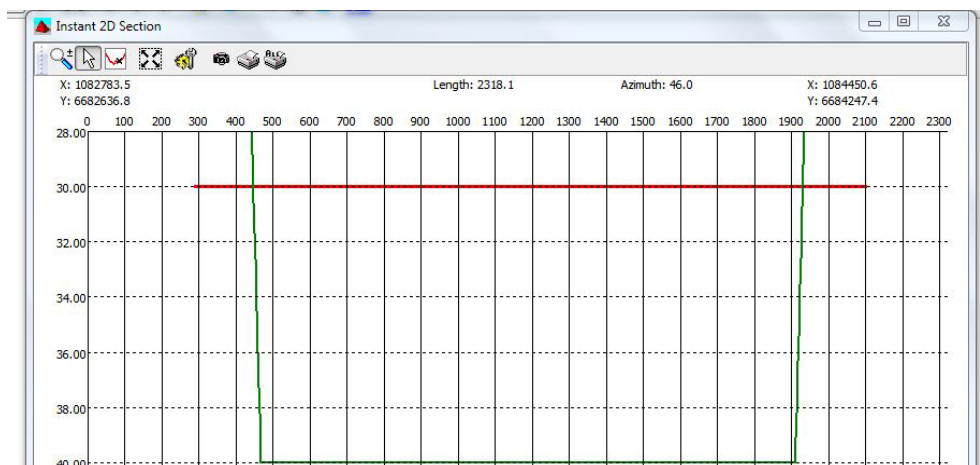
FIGURE 4. Channel Faces Increase Dramatically to Create Curved Toes



Once your channel is built and you are happy with your design, the output channel file (*.CHN) can be used with your survey data to compute volumes in the TIN MODEL program.

To compare a survey to the CHN file in TIN MODEL, Load the Input XYZ (or MTX) file and the CHN as the Channel Plan. You can then use the TIN-to-CHN volume calculation method to achieve a cut and fill volume, or use the 3D View and 2D View options to view the fill and cross sections across your channel.

FIGURE 5. Channel Sections in the TIN MODEL 2D View



If you have complicated channels with curves, give this program a try. If you need help creating a channel send your coordinates of the channel the and radius information to our support group and we will be happy to point you in the right direction to create a CHN file that you can use for your project.