

TML STORE

Hamilton Programming

Curbprof.tml

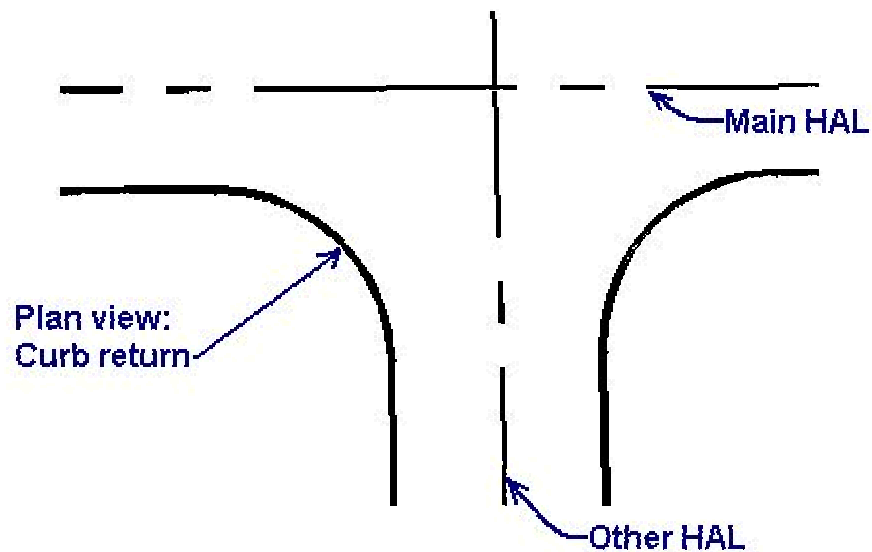
For Intersection Design



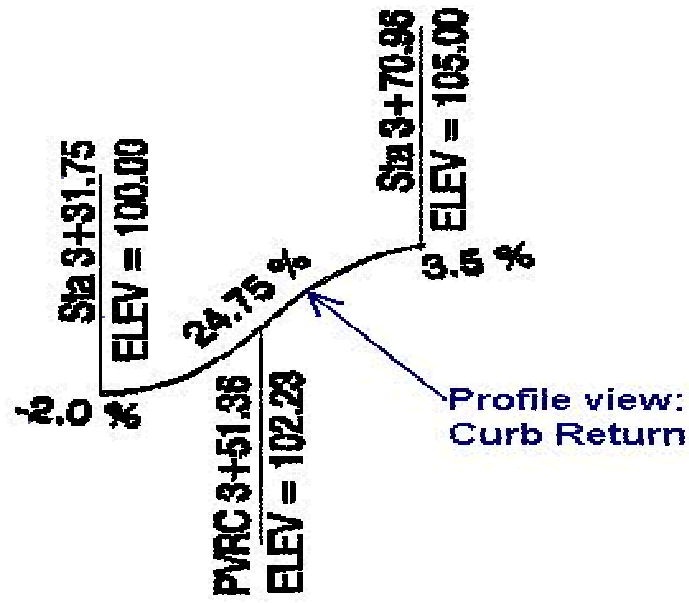
Designing curb returns has never been easier.

After downloading this command, type **curbprof** at the Terramodel command line and you will be able to design the curb return profile from a dialog box.

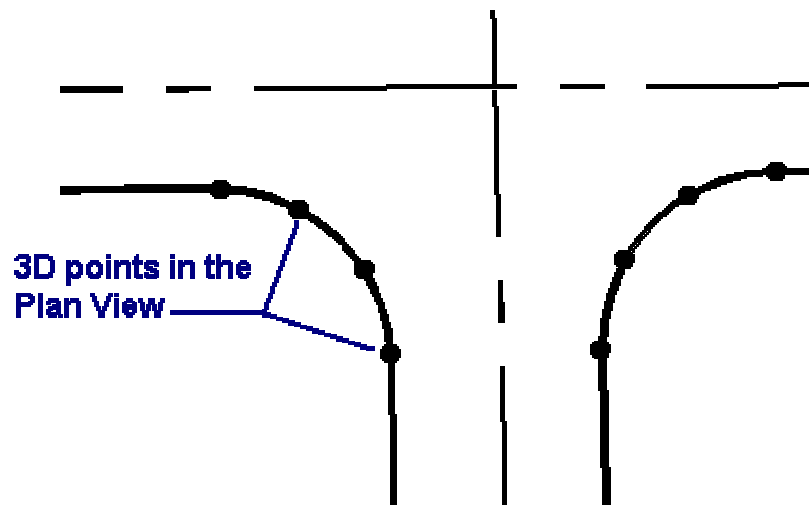
Start with this:



End with this:



AND



Using this:

Curb return Profile Settings

Method

Plane (w/ X-gutter) Vertical Curve

BCR elevation: 156.03

Incoming slope: % 0.51

PI elevation

Outgoing slope: % -1.08

ECR elevation: 155.80

Recalculate

Number of segments: 4

Create Points on layer: 0

Create Report

Create Profile on layers:

Left Right

3200PROFILELT 3300PROFILERT

Create Cancel

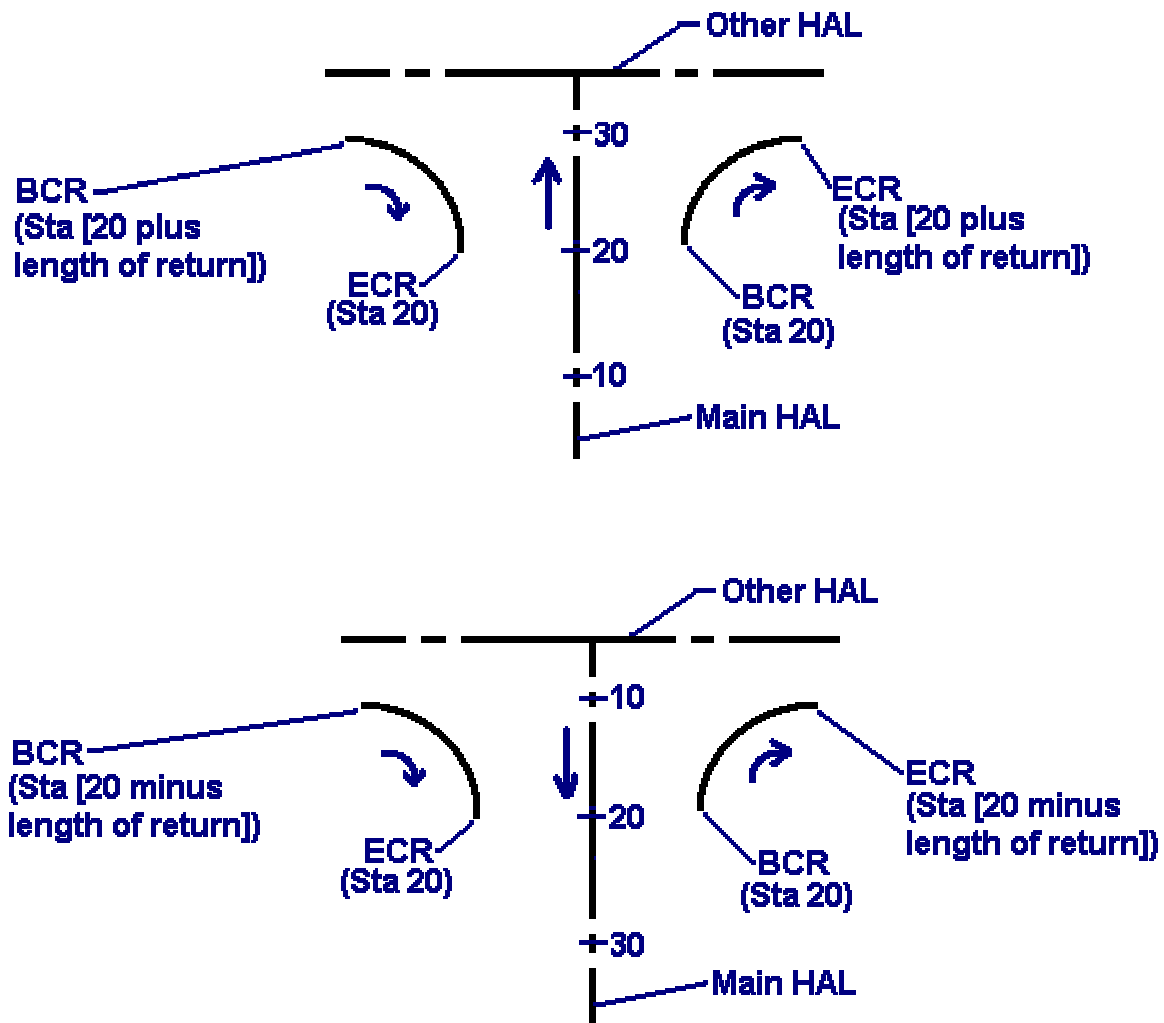
Stationing

Intersection design has never been easier. If you have tried creating profiles of curb returns with the commands available in Terramodel, you will have found identifying stations of the return almost impossible.

With **CurbProf** the stationing is defined from the Main HAL. The BCR and ECR are defined in a clockwise direction. If the BCR is closer to the Main HAL, then the station perpendicular to the BCR is assigned to the return at the BCR.

Depending on the direction of the return and the direction of the stationing of the Main HAL, the ECR station will be from subtracting or adding the length of the return from the BCR.

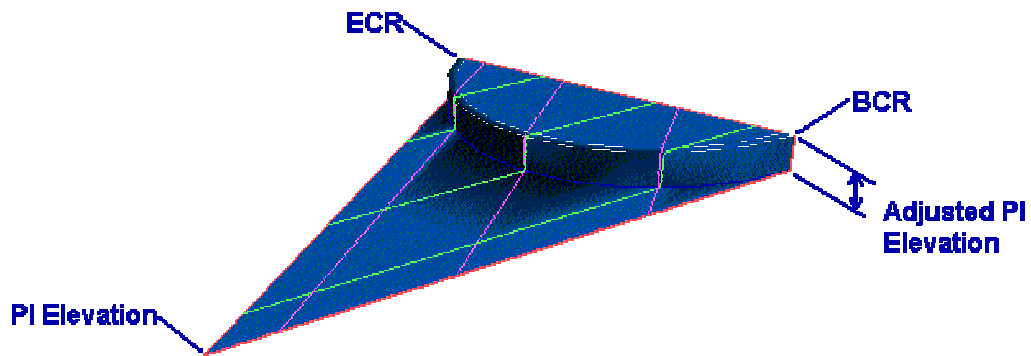
Here is a diagram of how the Stations, BCR and ECR are assigned to the return (notice the change in direction of the stationing in the second example):



Incoming and Outgoing Slopes

The *Incoming slope* and *Outgoing slope* of the return are determined by the position of the return. In a clockwise direction, the alignment that is closest to the beginning of the return determines the *Incoming slope*. The *Outgoing slope* is controlled by the alignment closest to the end of the return, in a clockwise direction.

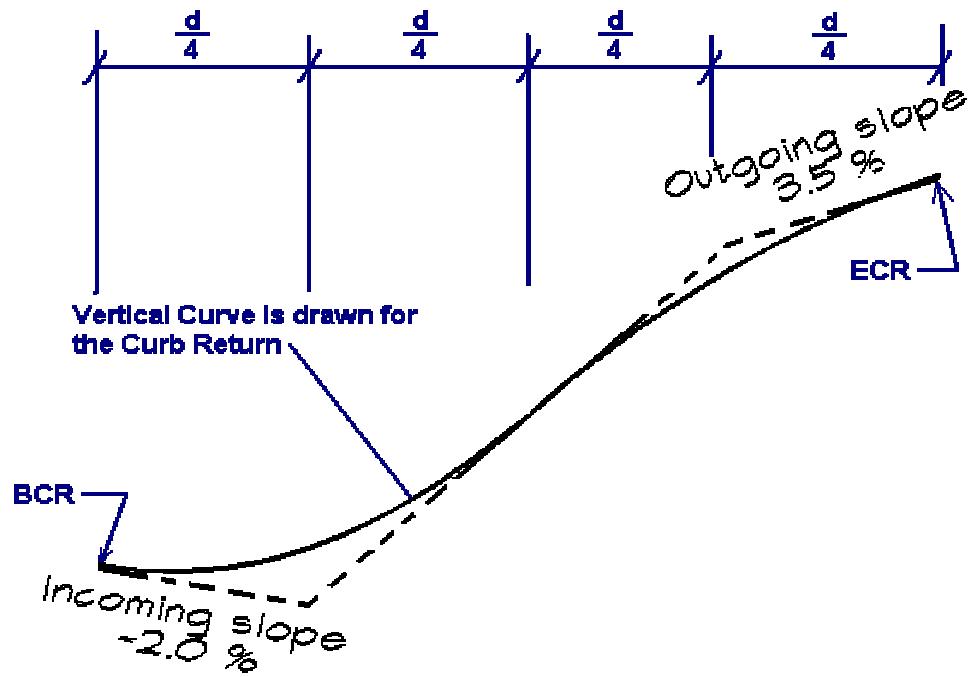
For the Plane method



You must have the following:

1. Horizontal Alignment or HAL
2. Arc for the curb return
3. Elevation of the beginning of the curb return (BCR)
4. Elevation of the PI
5. Elevation of the end of the curb return (ECR)

For the Vertical curve method



You must have the following:

1. Horizontal Alignment or HAL
2. Arc for the curb return
3. Elevation of the beginning of the curb return (BCR)
4. Incoming slope or grade in for the curb return profile
5. Outgoing slope or grade out for the curb return profile
6. Elevation of the end of the curb return (ECR)

To run curbprof:

Type ***curbprof*** at the command line in Terramodel.

You are asked for the HAL:

Select the Main Alignment

Main HAL:	<input type="text"/>	Arc:	<input type="text"/>	Other HAL:	<input type="text"/>	OK	Cancel
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If you have a VAL referenced to the HAL selected above, you will see it in the profile view and you will be prompted to select the VAL of the Main HAL:

Select the profile of the Main HAL

Main Val:	<input type="text" value="V=131"/>	Arc:	<input type="text"/>	Other HAL:	<input type="text"/>	OK	Cancel
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Notice the prompt change

Note: A VAL (or profile) is not needed, but the default elevations and grades will be found if you select a VAL.

Select the Arc (or return) in the plan view

Main Val:	<input type="text" value="V=131"/>	Arc:	<input type="text"/>	Other HAL:	<input type="text"/>	OK	Cancel
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Next, select the other alignment in the intersection:

Select the other Alignment



Main Val: Arc: Other HAL:

If the Other HAL has a profile referenced to it, you will see it in the profile view and you will be asked to select it:

Select the profile of the other HAL



Main Val: Arc: Other Val:

Click **OK** to continue the command and enter the settings of the intersection return.

Detailed explanation of each setting:

◆ **Plane method** = Select this method and the profile will be a plane based on the elevations of the BCR, PI and ECR.

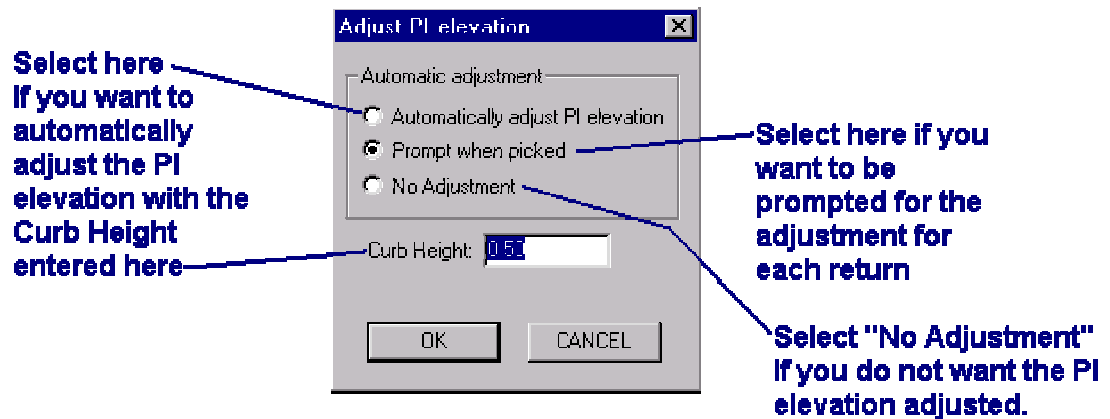
◆ **Vertical curve method** = Select this method and the profile will have vertical curves.

If you selected a HAL and VAL for BOTH alignments, then the BCR, ECR, Incoming Slope and Outgoing slope (and PI elevation if plane method) will automatically found for you.

◆ **BCR elevation** = Enter the elevation of the Beginning of the Curb Return. This is the Elevation of the Beginning of the return where the beginning is found by viewing the return in a clockwise direction.

◆ **Incoming Slope** = Enter the slope of the grade into the curb profile. Example of input: type -2 if the incoming slope is -2%.

◆ **PI elevation** = Enter the PI elevation if using the Plane method. Pick the *PI elevation* button to adjust the PI elevation.



- ◆ **Outgoing slope** = Enter the slope of the grade out of the curb profile. Example of input: type 3.5 if the incoming slope is +3.5%.
- ◆ **ECR elevation** = Enter the elevation of the End of the Curb Return. This is the Elevation of the End of the return where the end is found by viewing the return in a clockwise direction.
- ◆ **Recalculate** = For the Plane method only. Since only 3 values are needed to compute the data for the Plane method, *Recalculate* will update the unknown slope or elevation. For example, if the Beginning elevation and the PI elevation are known, then the Incoming slope value will be found automatically. If you change the incoming slope and remove the value for the PI elevation, then *Recalculate* will solve for the PI elevation. This can be a big time-saver when solving for the 3D plane.
- ◆ **Number of segments** = Enter the number of segments for the plane method. For both methods, this controls the number of segments created in the plan view along the curb return if "Create points on Layer" is checked.
- ◆ **Create Points on layer** = If this option is checked, then points will be created in the plan view with the elevations from the new curb return profile and placed on the layer selected here.
- ◆ **Create Report** = Check this if a report of the profile created is desired.
- ◆ **Create Profile on layers** = If you would like a profile of the curb return created, then check this box.
- ◆ **Left and Right layers** = Select the layer for the curb return profiles for the left side of the Main HAL and the right side of the Main HAL.

Here is an example of the report that is generated:

Delta = 88 59'11" R = 25.25 L = 39.22 T = 24.81

PLINE - R:511 Element:2

BCR station:3+31.75 (r=525)

ECR station:4+48.36 (r=519)

Vertical Curve Length = 19.61

Grade in: -2.00% Grade out: 3.50%

BCR Elev: 100.00 Pt # 370

1/4 Elev: 100.46 Pt # 371

1/2 Elev: 102.23 Pt # 372

3/4 Elev: 104.14 Pt # 373

ECR Elev: 105.00 Pt # 374

To label the profile as seen in this example: Use the LabelVAL command found in the Draft menu.

There is More !!!

Curbprof.tml doesn't just create profiles. Use it to find profiles.

Type **curbprof** at the command line in Terramodel. When you pick the HAL, the profile that is referenced to the HAL will be found and you will be zoomed into the station that you have picked. Pick the same HAL but at a different station, you will see how the profile view changes to match the station picked.

Note: Profiles must be on layers that are visible to take advantage of this feature.
picture here...

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