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### Introduction to Special Codes:

In addition to the codes that you add to the Feature Code List, there are some predefined code suffixes that you may use to end lines or start curves. For example, RP ST could start a Road pavement line/polyline where ST is the special code, END is the special code to end the line/polyline. ST & END (default) could be substituted for '+7' & '-7'. Substituting special code from the defaults can be done under **5 Feature Code List/Special Codes**


  **JOB: SURVPC-SPECIAL CODES2**   

File	Equip	Survey	COGO	Road
1 Job			6 Data Transfer	
2 Job Settings			7 Import/Export	
3 Points			8 Delete Job	
4 Raw Data			9 About Carlson SurvPC	
5 Feature Code List			0 Exit	

 **Code List: SurvPC-Special Codes** 

Category:  

Code	Linework	Line Type	Layer Name	Full Text	Code
AA	No	2D	AIR	AA	AA
ACOL	No	2D	ASCON	ACOL	ACOL
AD	No	2D	AIR	AD	AD
AI	No	2D	AIR	AI	AI
AL	No	2D	AIR	AL	AL

Add	Edit	Remove
Load	Save As	Special C 

**Special Codes**

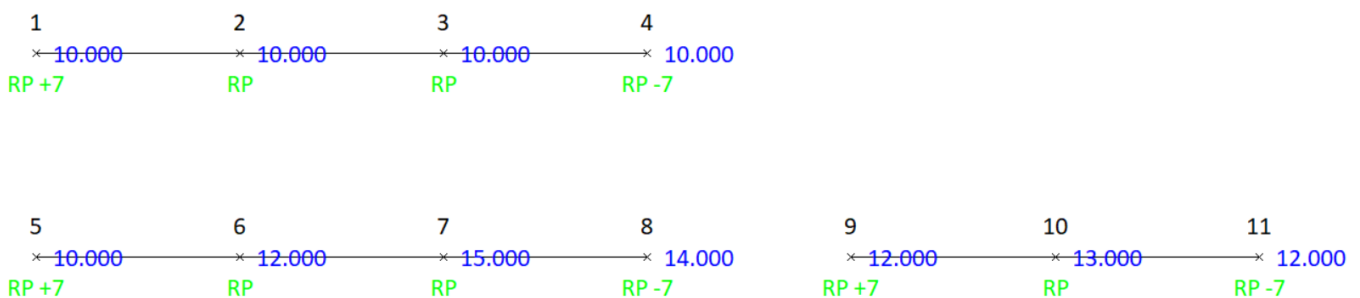
Code	Action
Space	Code Separator
None	String Designator
+7	Begin Line
-7	End Line
PC	Arc PC
PT	Arc PT
CLO	Close Figure

Carlson ▼
Code: 
Accept

To confirm these changes' Green tick'

## 1 ST & END: Start -End Line

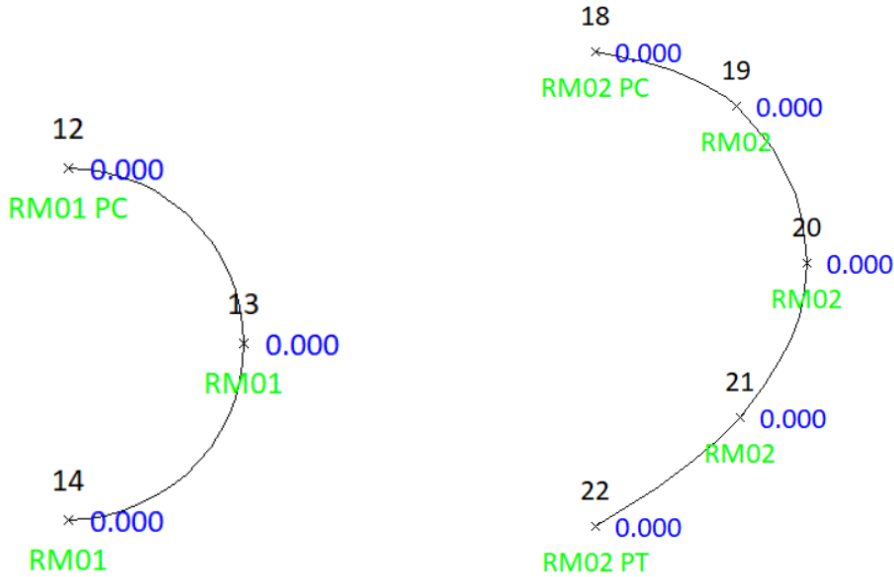
Start & end line. Some users prefer special codes such as BL for Begin Line and EL for End line or +7 & -7, these can be substituted as explained earlier. These special codes can only be used if the code used is for a line/polyline.



## 2 PC & PT: Start End Arc

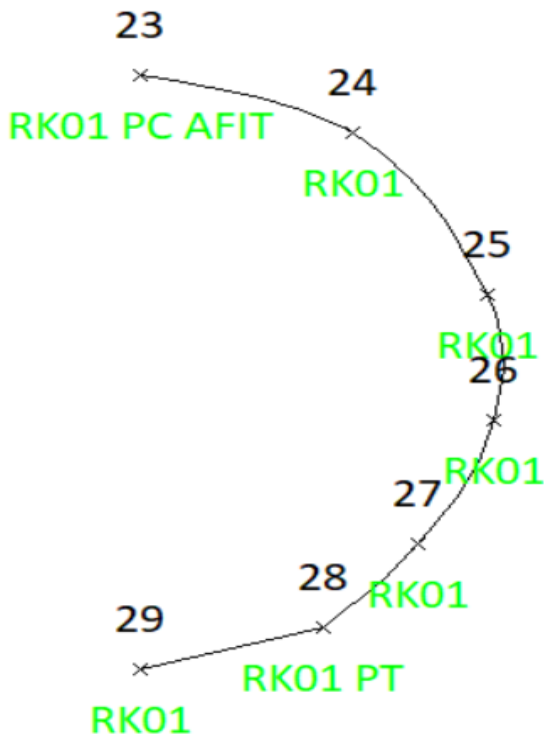
Used to specify the point of curvature (PC) and point of tangency (PT) of a curve. If you are taking shots on a curve, use PC to specify the beginning of the curve and PT to specify the end of the curve. The PC

special code will activate a 3-point arc automatically, so use of the PT code on a 3-point arc is redundant and therefore it is not necessary. You can even do a reverse curve by entering the PT instead as PC.



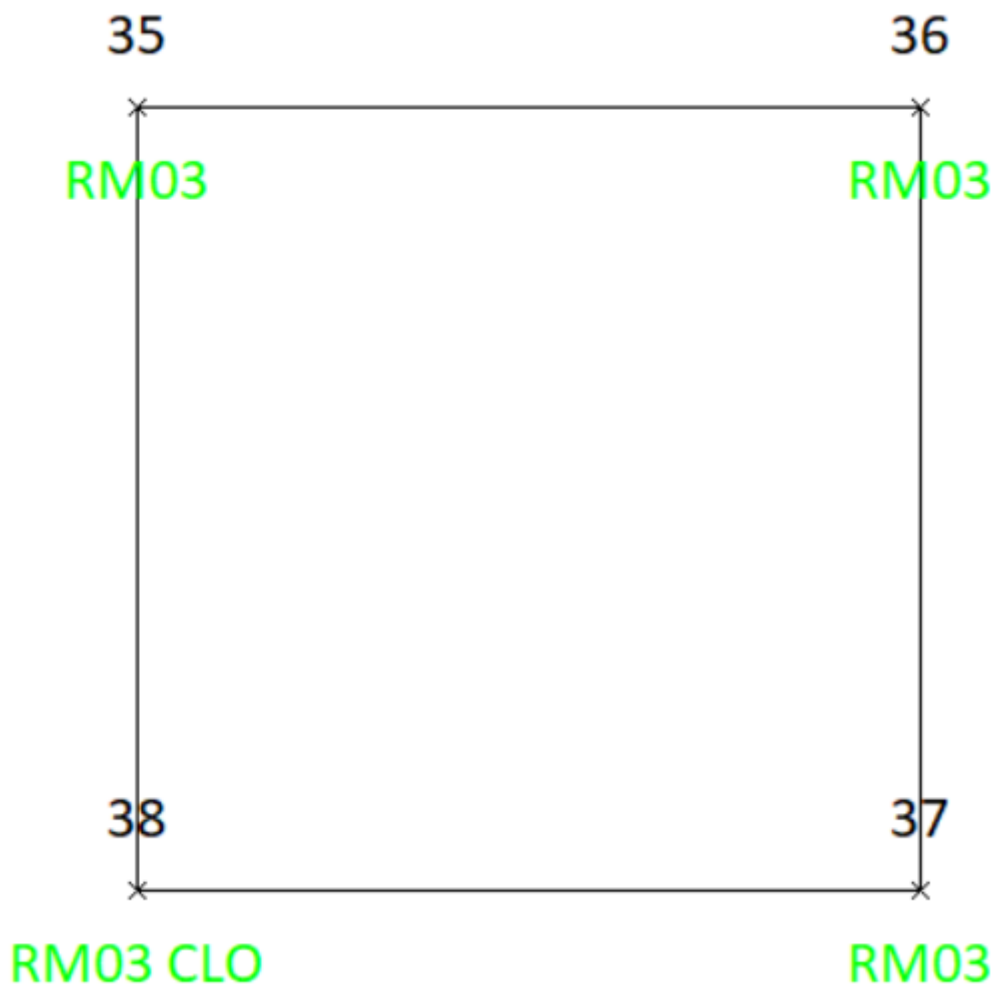
### 3 AFIT: Best Fit Arc

AFIT is used to best fit an arc. This special code is used after the PC special code to best fit the next codes up to the PT code. Points 23 to 28 are AFIT



## 4 CLO: Close Figure

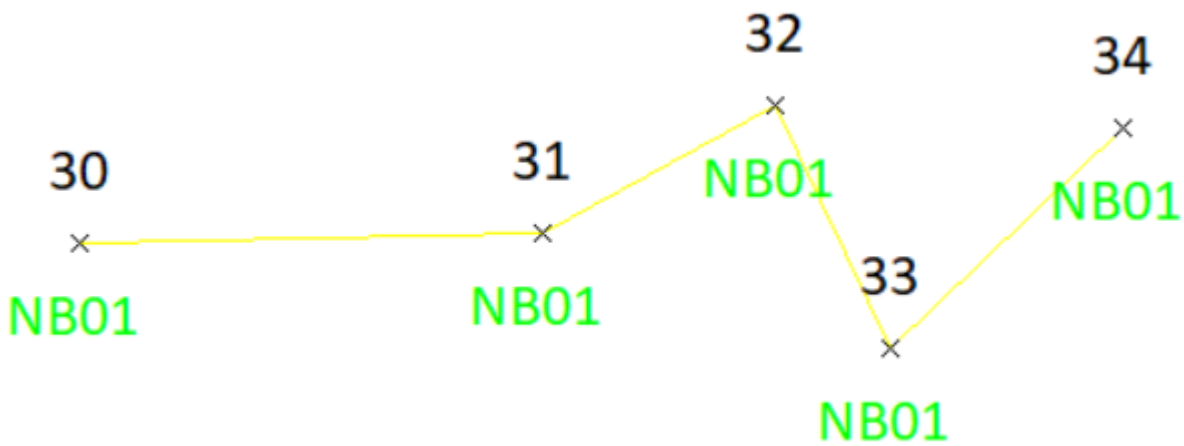
Use this special code to close a figure. This tells the software to close from the last point coded as CLO back to the first point of the figure. Note that after using a special code such as "CLO", appended with a space to the description code "BLD", that the program automatically removes the special code as it defaults the next description to "BLD". The "CLO" code also has the effect of ending the line and starting a new line. It only works with codes defined as 2D or 3D polylines. Points 35,36,37,38 will join back to 35 to close the figure.



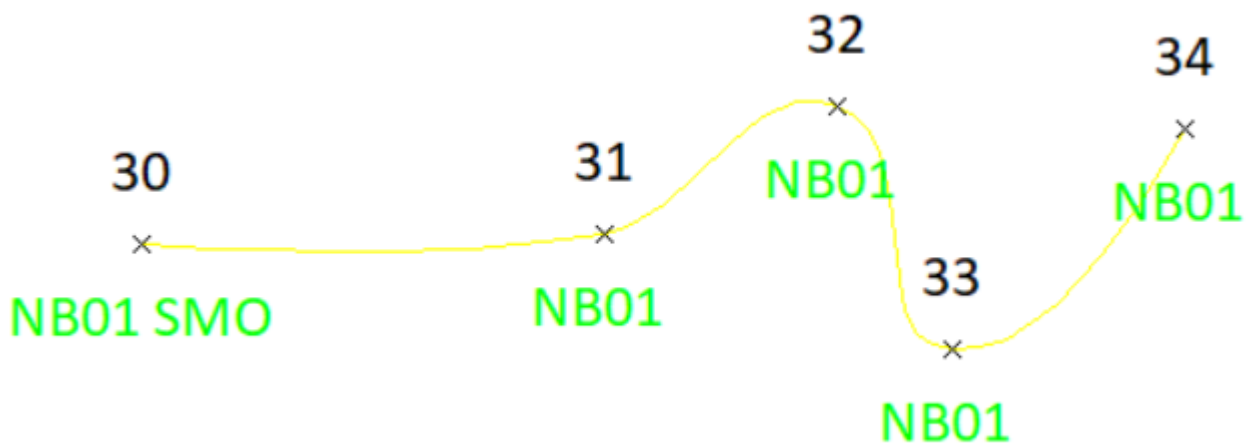
## 5 SMO: Smooth Line

Use this code to smooth the line through all of the points. This code must occur on the first point of the line.

Without SMO

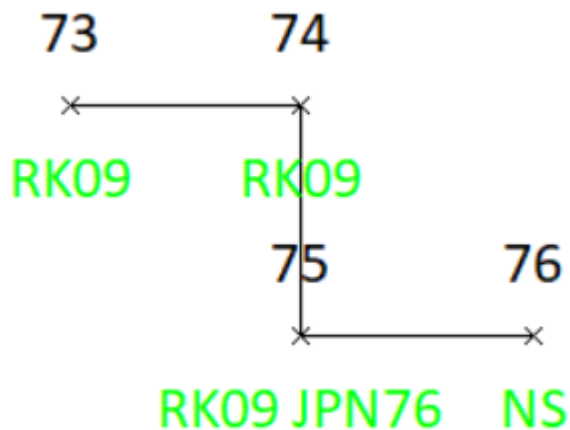


With SMO



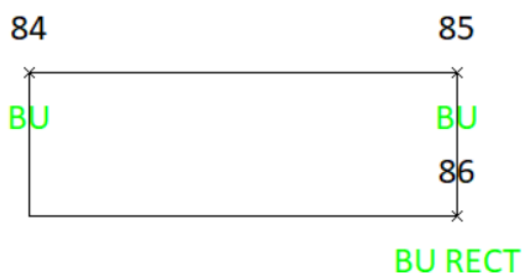
## 6 JPN: Join Point

Use this code followed by a point ID to create a new line segment between the current point and the entered point ID. Point 75 joins to point 76, doesn't have to be the same code or even a line code.



## 7 RECT: Close Rectangular

This special code can be used in 2 different ways. You can take measurements to 3 sides of a building and on the third side, add the special code **RECT**, and the program will create a 4-sided building. Or you can measure two sides of a building and enter the distance right (**RECT1**) or distance left (**RECT-1**) to create the other, parallel sides. Both methods are illustrated below.



## 8 OH & OV: Offset Horizontal, Vertical or both

You can create offset lines horizontal, vertically or both (by combining them). RM OH0.5 would create a horizontal line 0.5m over to the right of the original line, RM OH-0.5 would create a horizontal line on the left of the original line. LB OV2.1 would create a 2.1m vertical parallel 3D polyline, for example; locating the bottom of a retaining wall and having the special code create the top. You can even do multiple offset lines by combining them.

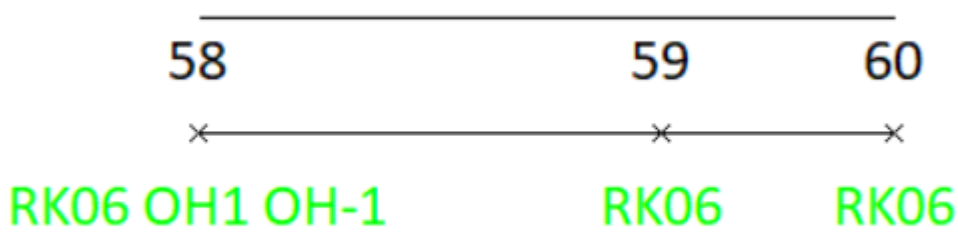
RM OH0.5



RT OH.5OH1



RK06 OH1 OH-1

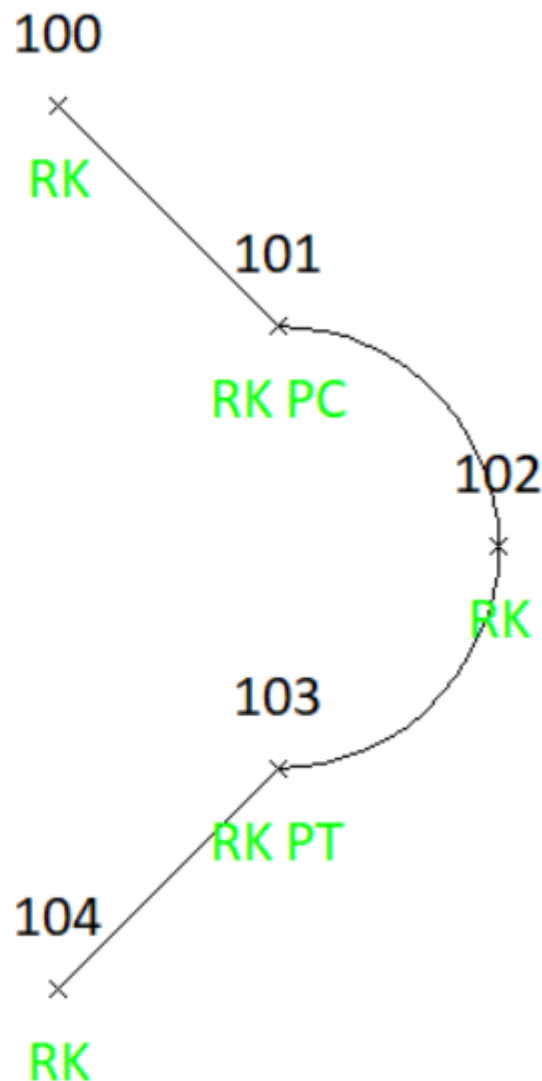




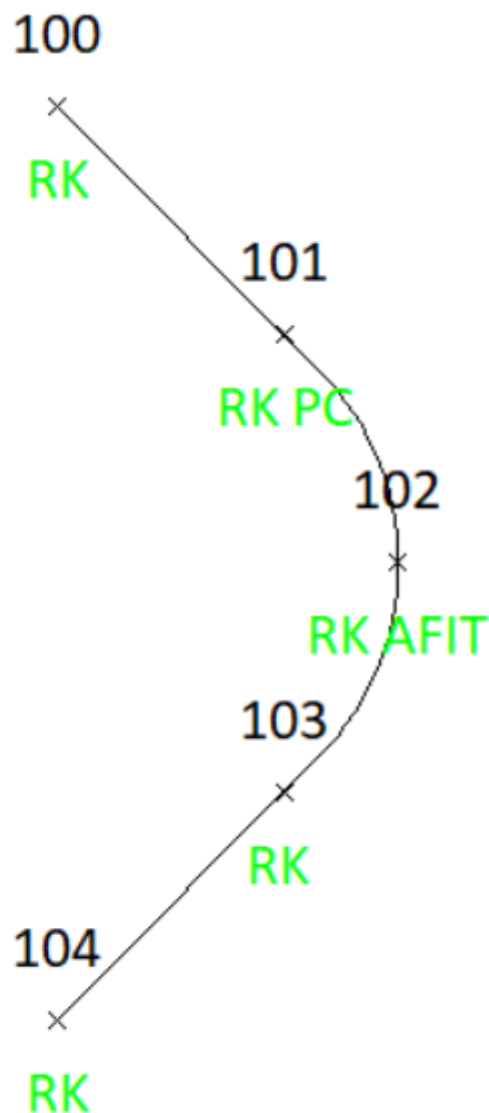


## 12 AFIT: Arc Fit by Second Point

This code stands for "Arc Fit". It is used with 3-point arcs to avoid bulges caused by not picking the PC (start) and PT (end) of a true tangent curve accurately, in the field. When measuring kerbs, it is common to get a bulging curve as shown below by picking point 101 too soon, still within the tangent, straight portion of the kerb. Note that the RK PT description on point 103 is not necessary--the "PT" portion is assumed on a 3-point arc. Only the "PC" code on point 101 is necessary to initiate and draw this arc.



To remove the bulge in the arc and make it tangent, add code "AFIT" to point 102. If Line Details are clicked on within Configuration, the moment you add the text (click 102 directly in map screen and edit it), the line will redraw as shown below. In the field, if you add AFIT ahead of time, anticipating a bulging arc, it will draw correctly in the field.

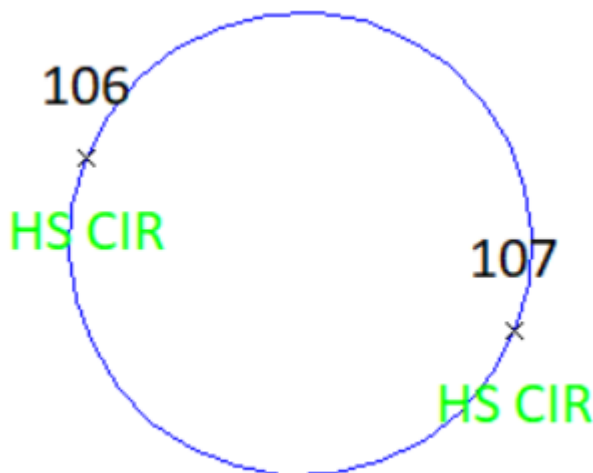


## 13 CIR: Close Circle

The Close Circular special code works 3 ways. First, with a single, measured point including a radius distance, it will draw a circle, as in CIR2 for a 2-meter radius.



Secondly, if 2 points are used, then the radius becomes the mid-point of the 2 points and a circle will be drawn through both points.



Third, if 3 points are entered as in 108 HV CIR, then 109 HV, then 110 HV CIR, the third point defines a unique circle without user entry of the radius. The code used must be a linework code (like HV for Hydro revetment wall), not a point code, for the circle to be drawn.

## 14 BFIT & BPJR: Best Fit Line, Best Fit projection

Currently under review

