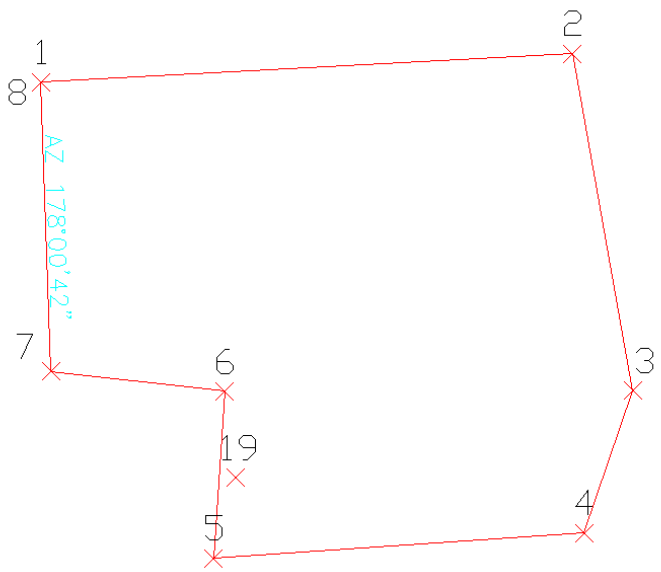
Carlson Software Inc.
102 West 2nd Street
Maysville, KY 41056

www.carlsonsw.com
Phone: (606) 564-5028
Fax: (606) 564-6422

Traverse Examples



#1 This first example is a closed traverse with an internal backsight of azimuth 178d0'42"

Raw Editor RW5> c:\scadxml\data\example.rw5 CRD> C:\scadxml\DATA\example.crd

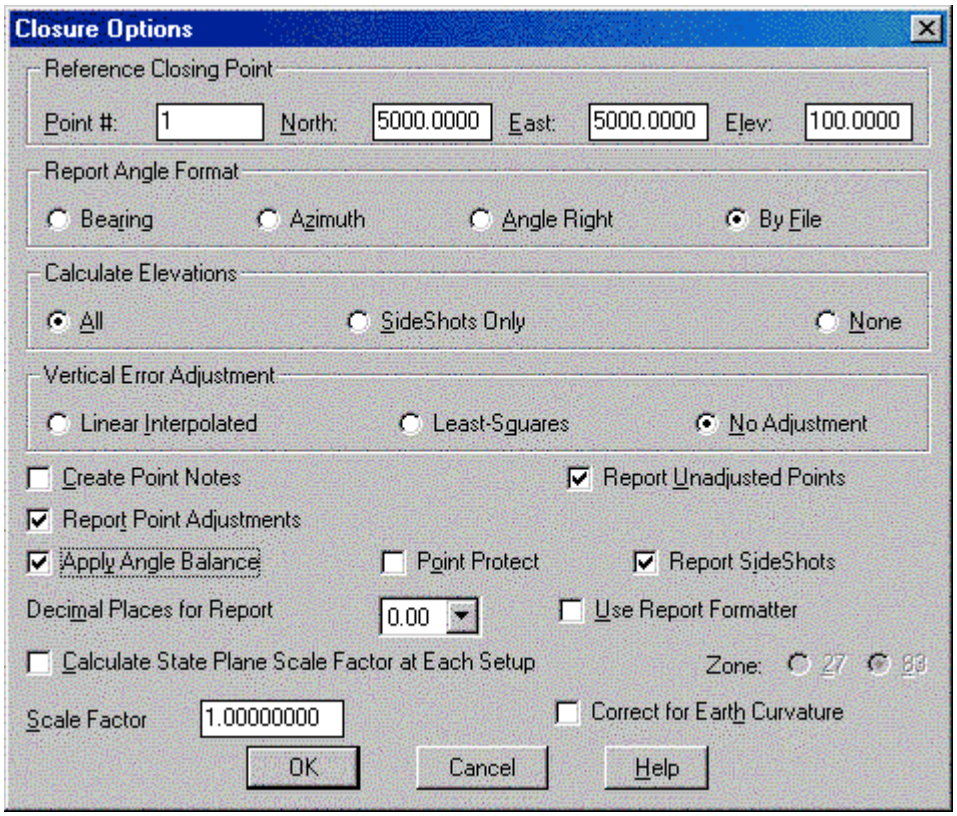
File Edit Search Display Add CRD Process (Compute Pts) Tools Help

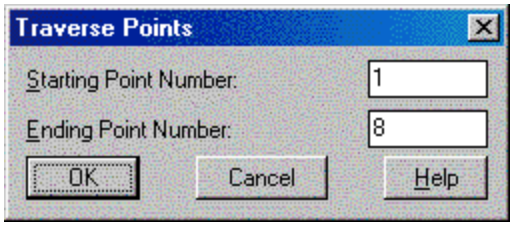
	Type							
1		PntNo	Northing		Easting	Elevation	Description	
2	PT	1	5000.0000		5000.0000	100.0000	START	
3		OcPt	BsPt		Azi	SetAzi		
4	BK	1			178.0042	0.0000		
5		InstHt	RodHt					
6	HI	5.320	6.000					
7		OcPt	FsPt	Code	HorzAngle	SlopeDist	ZenithAng	Description
8	TR	1	2	AR	268.5330	711.320	89.4050	P2
9		InstHt	RodHt					
10	HI	5.430	6.000					
11		OcPt	FsPt	Code	HorzAngle	SlopeDist	ZenithAng	Description
12	TR	2	3	AR	262.5448	457.760	89.3236	P3
13		InstHt	RodHt					
14	HI	5.400	6.000					
15		OcPt	FsPt	Code	HorzAngle	SlopeDist	ZenithAng	Description
16	TR	3	4	AR	208.5710	201.310	89.1803	P4
17	TR	4	5	AR	247.1657	497.120	88.5235	P5
18	SS	5	19	AR	289.3456	112.45	91.4405	SS1
19	TR	5	6	AR	277.4835	223.980	90.2926	P6
20	TR	6	7	AR	92.4143	233.880	90.2746	P7
21		InstHt	RodHt					
22	HI	5.420	6.000					
23		OcPt	FsPt	Code	HorzAngle	SlopeDist	ZenithAng	Desc
24	CL+AB	7	8	AR	261.2756	387.250	91.4405	CLOSE

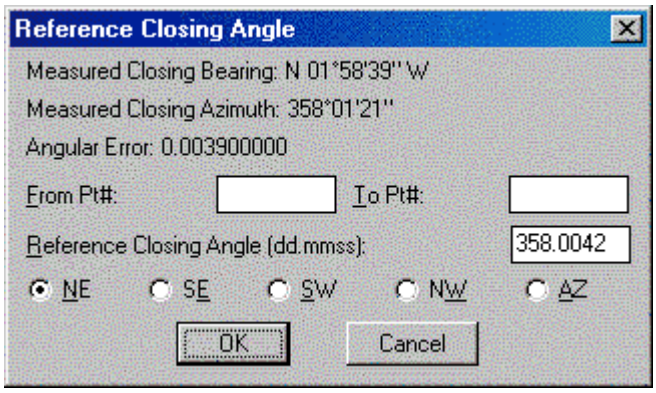
Notice that the record from point 7 to 8 is set as a CL+AB record. This tells the program that point 8 is the closing point and that the angle from 7 to 8 is the closing angle. For traverse adjustment, the closing reference point is 1 and the closure error is the difference between point 1 and point 8. For angle balance, the reference closing angle is 358d0'42" (178d0'42" + 180).

The angle balance error is the difference between this reference angle and the angle from points 7 to 8.

Now let's process using Compass adjustment with Angle Balance. Choose Compass under the Process menu and fill out the dialogs as shown.







First half of process report:

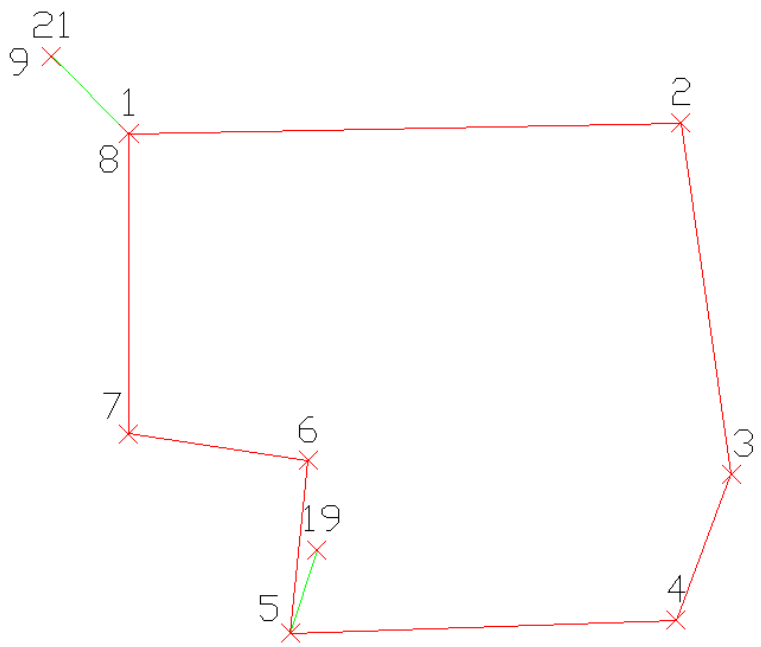
```
Closure Results (Before Angle Balance)
Starting Point 1: N 5000.0000 E 5000.0000 Z 100.0000
Closing Reference Point 1: N 5000.0000 E 5000.0000 Z 100.0000
Ending Point 8: N 5000.0906 E 4999.9699 Z 100.0595
Azimuth Of Error: 341°38'22"
North Error      : 0.09061
East Error       : -0.03007
Vertical Error   : 0.05953
Hz Dist Error    : 0.09547
Sl Dist Error    : 0.11251
Traverse Lines   : 7
SideShots        : 2
Store Points     : 1
Horiz Dist Traversed: 2712.2905
Slope Dist Traversed: 2712.6200

Closure Precision: 1 in 28409
```

Shown above is a section from the resulting process report. The angle balance had an error of 39 seconds which was divided among the 7 traverse sides. The Compass Closure shows how each traverse point was adjusted and then the resulting adjusted angles and distances.

#2 Here is another layout of the last example that shows an external backsight setup

In this case there are two known points. Point 1 is the starting point and point 21 is the initial backsight. The setup could also use a backsight azimuth (ie north azimuth for example) instead of a backsight point number.



The closing record setup has changed from the last example. In this example, the shot from 7 to 8 is the closing shot with point 8 as the Ending Point. The closing reference point is still point 1. The angle balance shot is from 8 to 9 and the reference angle is from 1 to 21.

Closing point: **1**

Starting Point: **1**

Ending Point: **8**

Angle Balance: from **8 to 9**

Reference Closing Angle: from **1 to 21**

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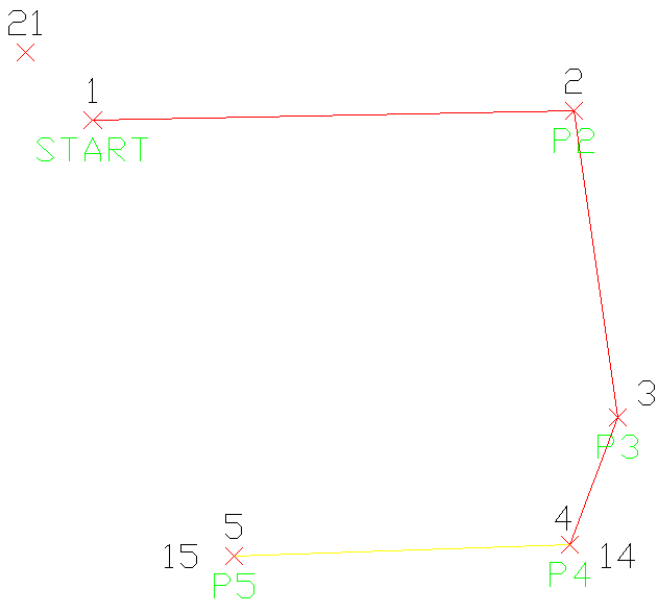
#3 Here is an example of an Open Traverse



Example of an open traverse

This traverse starts from the known point 1 and ends at the known point 14. There is four known Points that we start with: 1, 21, 14, 15.

Closing Point: **14**

Starting Point: **1**
Ending Point: **4**

Angle Balance Shot: from **4 to 5**

Reference Closing Angle: from **14 to 15**