

TPC Desktop Series

Closure Learning Guide

1/18

NOTICE

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Table of Contents

Typography	2
System Requirements	2
Important Licensing Information.....	2
Overview	3
Checking Closure	4
Checking the Closure Type of the Field Data Traverse.....	5
Changing the Closure Type.....	5
Changing the Closed Loop Tolerance	6
Changing the Starting and Ending Points	7
Checking the Closure.....	7

Typography

We will be using the following typography to distinguish items in the text:

- [Enter] Brackets indicate keys on the keyboard.
- flexibility* Italics are used to highlight words for more emphasis.
- Lot 2** Numbers or text that you enter.

System Requirements

This version of TPC Desktop requires Windows 10 / 8.1 / 8 / 7 / Vista and Internet Explorer Version 6.0 or later. We recommend you have 2 GB of RAM 32-bit OS) 4 GB RAM (64-bit OS) and 60 MB of free hard disk space in which to install the program. **An internet connection is required for program validation.**

Important Licensing Information

Our License Agreement allows you to use TPC on only one computer at a time unless you purchase additional licenses. We do offer one courtesy installation for an additional home or field computer, *but not for a second user* and assuming that the two programs are not being used at the same time. To request a courtesy license contact Traverse PC.

Overview

In this chapter, you will check the closure and adjust the data you entered in the chapter on Entering Field Data.

TPC Desktop uses the Closure View to report the closure of a traverse, edit the closure settings and balance angles, apply curvature and refraction, specify precision and apply scale factors.

All of the adjustments recompute the closure and report it to you right in the Closure View. So this is a great way to try different options and methods of adjusting your data.

►Undoing Adjustments

Any adjustment to apply in the Closure View can be undone. Just choose **Tools | Undo Adjustments**.

►This chapter does not include information on Least Squares adjustments

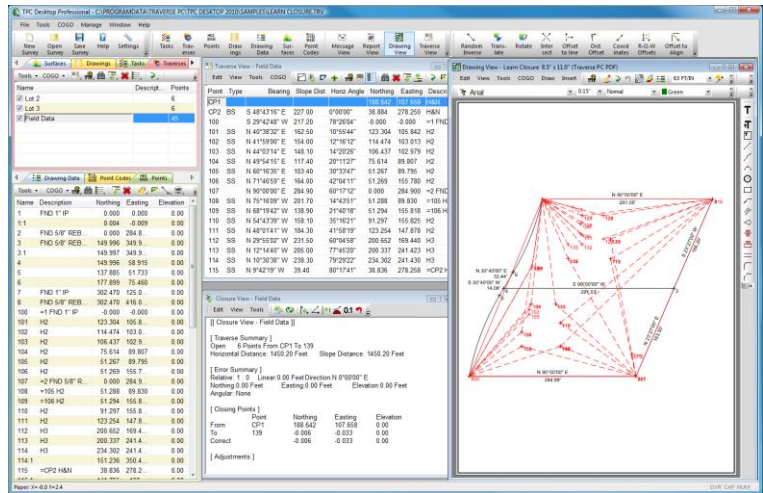
This chapter does not include information on Least Squares adjustments.

🌀To learn about Least Squares adjustments

1) Refer to the chapter on Least Squares Network Adjustment later in the Learning Guide.

►Getting started

- 1) From the Tasks Manager choose **Sample Surveys**.
- 2) Double-click the **LEARN CLOSURE.TRV** file.
- 3) Choose **File | Save Survey As**.
- 4) Enter the name **Closure** and choose **Save**.
- 5) If prompted to replace the existing file, choose **Yes**.



Checking Closure

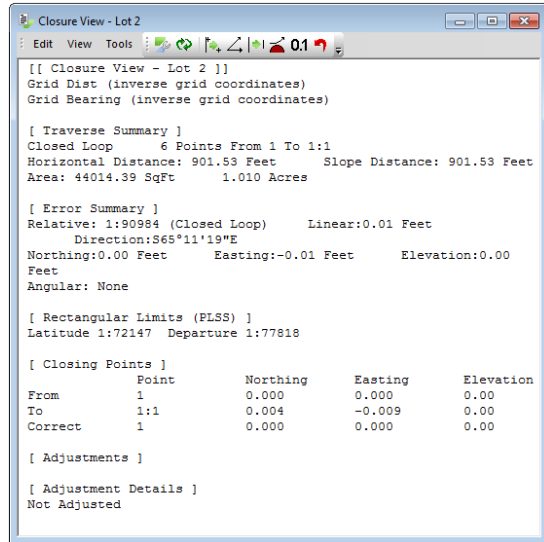
With TPC Desktop, you can check the closure of any traverse any time just by opening its *Closure View* or by including closure information in the Traverses Manager. Let's take a look at both of these options.

► Closure View

The Closure View is used to check the closure of a traverse. Like the rest of TPC, the Closure View provides a flexible environment for summarizing and adjusting an entire traverse or one or more sections of a traverse.

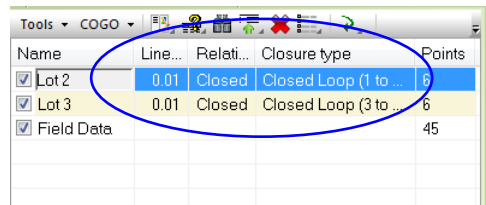
► Opening the Closure View

- In the Traverses Manager, select the traverse you want to open and choose **Tools | Open Traverse | Closure View**.
- If you have already opened the traverse you want in its own Traverse View, choose **Tools | Closure View**.



► Traverses Manager

You can also include much of the Closure View information right in the Traverses Manager where you manage your traverses. Include the relative error and area of each closed traverse. Printout the Traverses Manager or send it to a CSV file you can import into a spreadsheet. Getting information out of TPC Desktop is very easy.

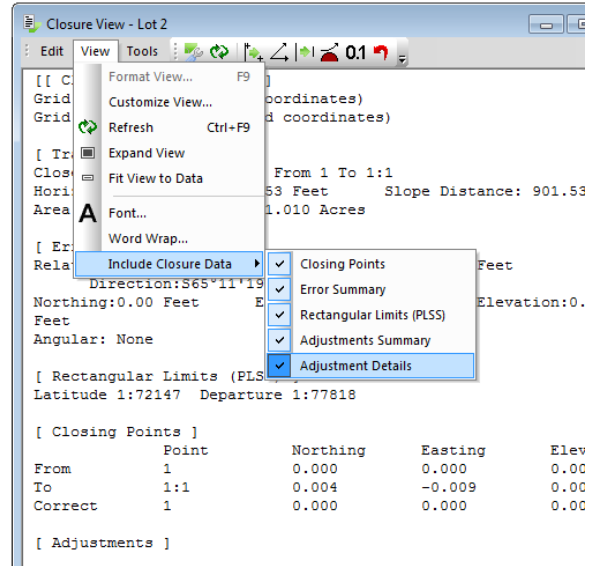


Checking the Closure Type of the Field Data Traverse

It is time to see how accurate our field crew was when they collected the field data.

- 1) Right-click the **Field Data** traverse in the Traverses Manager and choose **Open Traverse | Closure View**.

If the Closure View does not show all of the sections shown here, choose **View | Include Closure Data** and match the check marks shown here.



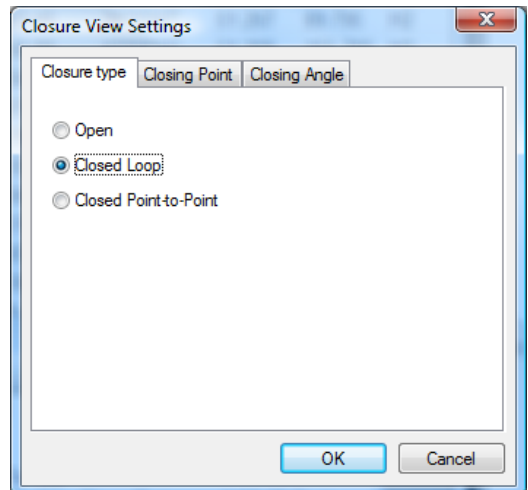
Changing the Closure Type

Because our Field Data traverse started on a control point we set in the middle of the property and because we ended our traverse on a corner we had previously traversed through, TPC may not see this traverse as a closed loop (depending on your Closed Loop tolerance on the Limits tab).

Note: Not all options are available in personal and premium editions.

We need to tell TPC that this is a closed loop and where it starts and stops.

- 1) Choose **Edit | Closure Settings**.
- 2) Left-click the **Closure type** tab then left-click **Closed Loop**.
- 3) Choose **OK**.



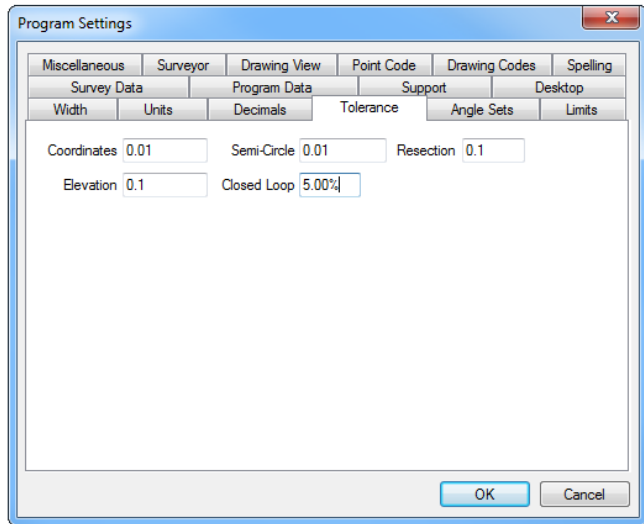
Changing the Closed Loop Tolerance

As you enter data, Traverse PC compares the coordinates of the first occupied point in the traverse with the coordinates of the last occupied point in the traverse to determine what type of closure is most likely to be used. If the distance between the first OP and the last OP is more than a fixed percentage of the total distance of the traverse, TPC sets the closure type to Closed Point-to-Point. If the distance between the first OP and the last OP is less than a fixed percentage of the total distance of the traverse, TPC sets the closure type to Closed Loop.

To change the percentage that Traverse PC uses in determining the closure type;

- 1) From the desktop menu, choose **Tools | Program Settings** and go to the **Tolerance** tab.
- 2) Set the **Closed Loop** percentage to **5%** and choose **OK**.

The higher the percentage you enter in Closed Loop, the more traverses will be set to Closed Loop. The lower the percentage you enter in Closed Loop, the more traverses will be set to Closed Point-to-Point.

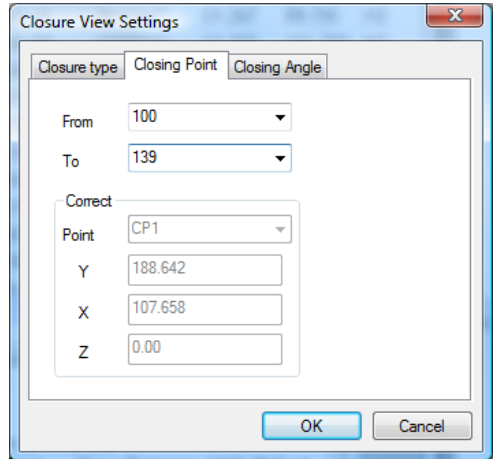


Changing the Starting and Ending Points

Now we need to tell TPC what the starting point and ending points of the loop are.

- 1) In the Closure View, choose **Edit | Closure Settings**.
- 2) Click on the **Closing Point** tab.
- 3) Enter **100** in **From**.
- 4) Enter **139** in **To**.
- 5) Choose **OK**.

Point 100 was the first time we occupied the southwest property corner (Lot 2 Point 1). Point 139 was the second time we occupied this point and closing the loop.



Checking the Closure

Let's see how the field crew did.

- 1) Check the Traverse Summary to make sure the traverse is a **Closed Loop from 100 to 139**.
- 2) Check the **Relative and Linear error in the Error Summary**.

Note that the Linear error of 0.034 feet matches what we found when we did a Random Inverse between point 139 and point 1 and the Relative error is 1 in 36,755.

