TPC Desktop Series

Introduction

2/23

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https://traverse-pc.com

Help System: Getting Started

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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 11 / 10 / 8.1 / 8 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.

Welcome to TPC Desktop

Traverse PC Desktop is the most comprehensive and innovative software available for Land Surveying today. TPC Desktop provides a unique environment for managing your survey data that makes everyday tasks like COGO and drafting fun again.

It's Practical - One of the first things you'll notice about TPC Desktop is that it's Practical. It just makes sense for surveying. You won't wade through countless commands typical of CAD programs. Instead, you'll find the tools you use every day right at your fingertips.

It's Easy to Learn - The most frequent comment we get about our software is that it is so easy to learn and use. It works like surveyors work – it's intuitive. Think of TPC Desktop as a workbench of tools that adhere to a few basic rules. You perform surveying tasks by combining the appropriate tools however you choose. Once you learn the tools, you can accomplish new tasks by creatively rearranging the tools.

It's Fun – TPC Desktop is not like any other surveying software you have ever used. Once you get familiar with a few features like Quick View and Smart Drawing Objects - the fun begins. You'll find that you actually enjoy working up a survey with TPC Desktop.

It Starts with Your Data - TPC Desktop starts with your survey data. Whether you enter a deed manually or import data from your data collector, GPS or total station, all your data is available all the time. So correcting mistakes is easy. If you enter a bearing incorrectly - just change it. If you forget a point - just insert it. TPC recomputes the dependent points and updates your maps - all automatically.

Traverses - A traverse is any group of points that belongs together for any reason. And when you are working on a survey, there are lots of reasons. As you use TPC, you'll find yourself doing more and more with ***traverses***.

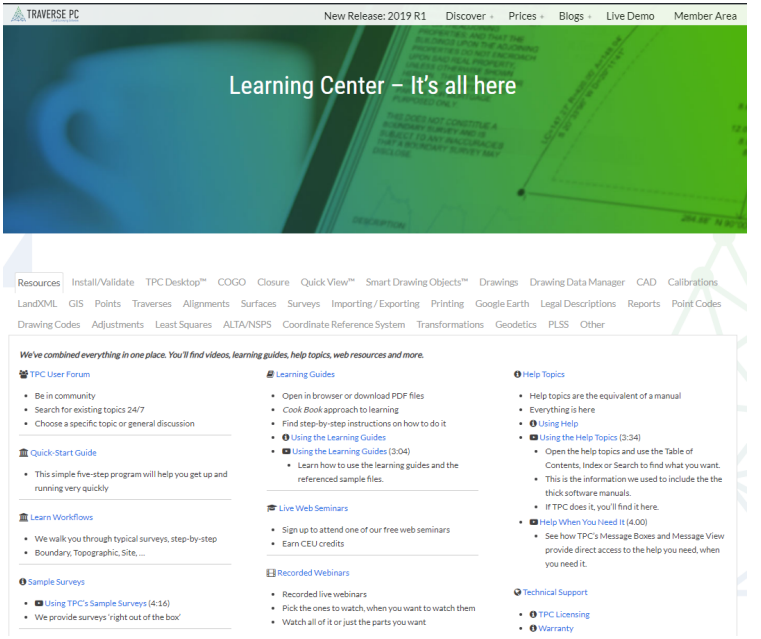
Views - Views organize your survey data and the things you do with it. Manage your surfaces in the Surface View and check your closure in the Closure View. It's a simple, yet very powerful way to do surveying.

Learning Curve - The learning curve is *short*. You will need to grasp the idea of creating a survey from traverses, but once you grasp this one concept, the rest of Traverse PC just kind of falls into place and you'll start thinking of what else you can use traverses for.

Enjoy learning and using TPC Desktop.

Learning Center

Our TPC Learning Center has it all. Everyone learns differently, so we provide videos, learning guides, help topics and lots more. Find what works for you.



Tasks Manager / Help Menu

Both the Tasks manager and the Help menu include the ***Member Area*** link where you can access online resources like your License Manager and our Learning Center.

Topic Tabs

Individual tabs for topics like COGO, Closure and Drawings take you to detailed instructions and videos on that topic.

TPC User Forum

Get help 24/7 from TPC's tech support staff and other TPC users.

Quick Start Guide

We've provided a sequence to help you learn how and why TPC works.

Learn Workflows

We provide step-by-step instructions for specific survey types like Mortgage, Boundary, Topo, Site and more.

Learning Guides

TPC's Learning Guides are cookbook like, with the steps on the left and pictures on the right.

Live and Recorded Web Seminars

Call and ask about attending a FREE web seminar. We'll send you an email with a link to the seminar where you can watch and listen live as we walk you through using TPC. Traverse PC offer web seminars on several of the popular topics.

Sample Surveys

TPC comes with a number of samples of actual surveys completed in Traverse PC.

1. From the Tasks manager, choose **Sample Surveys.**
2. From the **Open** dialog, open a file like **SAMPLE SITE SURVEY.trv**.

In this booklet, we introduce you to some exciting technology available only in TPC Desktop. These technologies help make surveying fun again by taking care of the busy work for you. You'll learn more about each of the technologies in the pages that follow.

TPC Desktop™

You do everything right from the ***TPC Desktop™***. Just open the View you want and there's all your data and the tools to work with it. Once you learn how the TPC Desktop works, you'll do your work more efficiently and have a lot more fun doing it.

Obvious Navigation™

TPC Desktop makes it easy to access the data you want when you want it. Yet it gives you complete freedom to organize it all the way you want. Extend the TPC Desktop onto multiple monitors or squeeze it down to your notebook computer. No matter how you lay it out, you can always get around efficiently with our ***Obvious Navigation™***.

Quick View™

Select the traverses, points and surfaces you want to include in a drawing and tell TPC how you want to draw them and our ***Quick View™*** technology draws it for you. And go ahead, fix the mistake you made when you calculated a point or entered a bearing. The drawing updates automatically because it's based on the data.

Smart Drawing Objects™

Take the busy work out of drafting with our smart drawing objects. Rotate your drawing on the page and the north arrow rotates automatically. Or reference a background photo to your survey then change drawing scale and the photo rescales too. You'll find dozens of these ***Smart Drawing Objects™*** that know just what you want them to do.

Universal Map Sharing™

You can share your drawings with anyone because TPC supports both vector and raster drawing formats like PDF, DWG, DXF, DGN, Shape, PGN, EMF/WMF, GIF, TIF & JPG.

What? List™

For lack of a better definition, we call it the ***What? list™***. When you perform a data or COGO operation, you always know what data you're working with because the ***What? list™*** tells you. Sounds simple - and it is. That's the whole point.

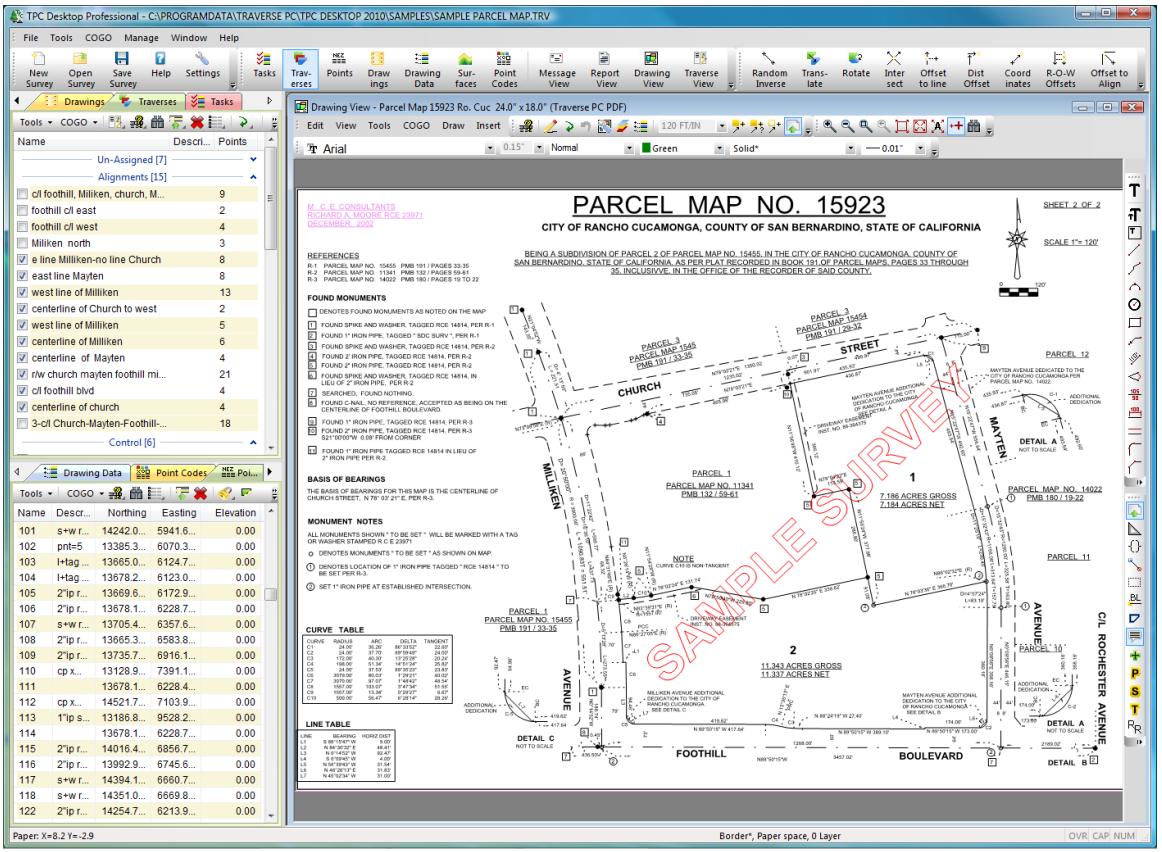
You do everything from the TPC Desktop - everything! We'll introduce you to many of the individual views in this booklet, but for now, let's look at the desktop itself.

Open the Views You Use

To get the most out of TPC Desktop, open just the views you use. If you don't use Point Codes, don't open it. This keeps the desktop streamlined and efficient. You can also group views together using tabs. This frees up other areas of the desktop for other things. In the example below, we've left lots of room for our drawing.

Synchronized Views

As you enter or edit survey data in one view, the changes are reflected in every other view. So go ahead, add a point to a traverse and it shows up automatically in the drawing and the Points manager. Or update the position of a point with one of the COGO tools and watch the line labels in the drawing update automatically to reflect the change.



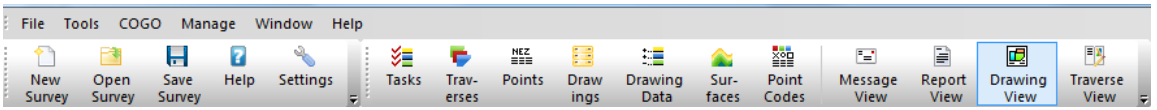
Managing a Survey

You can think of the TPC Desktop as helping manage your survey. Everything you do here is part of the current survey or job you are working on. Whether adding a new drawing, editing a surface, importing field data, or writing a legal description, it's all part of the current survey.

TPC uses the term ***survey*** to refer to a survey job. Surveys consist of *traverses*, *points, drawings, surfaces, reports, adjustments and files*. TPC Desktop works with one survey at a time. Open the survey you want or start a new one, add traverses and points, compute some coordinates, create a drawing or report then save the changes you've made back to the survey file. The next time you open the survey you can pick up right where you left off.

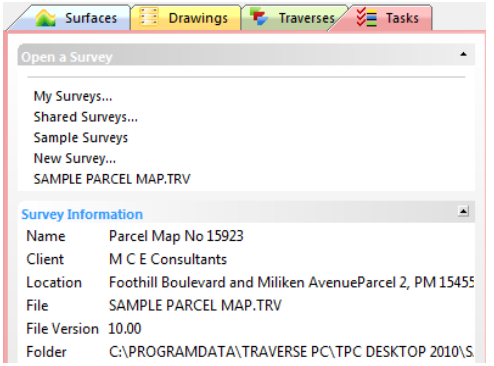
TPC Desktop Menu and Toolbars

The desktop menu and toolbars (located at the top of the desktop) perform survey operations. This is where you will save the survey you are working on, import and export data, do coordinate conversions or adjust a network using Least Squares.



Survey Information

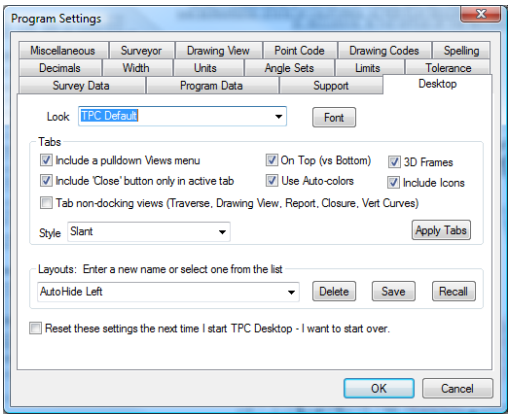
When you create a survey, you can enter information about the client, job, location and your own survey company. The Tasks manager displays this information, helping you identify this survey when you open it in the future. This is a great way to make sure you have the correct survey.



This same information can also be included as variables in your drawing templates. The variable gets the information from the survey and displays it in the drawing automatically for you. You never have to add a job number or filename to a drawing again.

Program Settings

Choose **Tools | Program Settings** to customize the way TPC Desktop looks and works. Press [F1] on any tab to learn what a particular setting does.



Think of these as general settings. You'll find more specific settings in the individual views themselves.

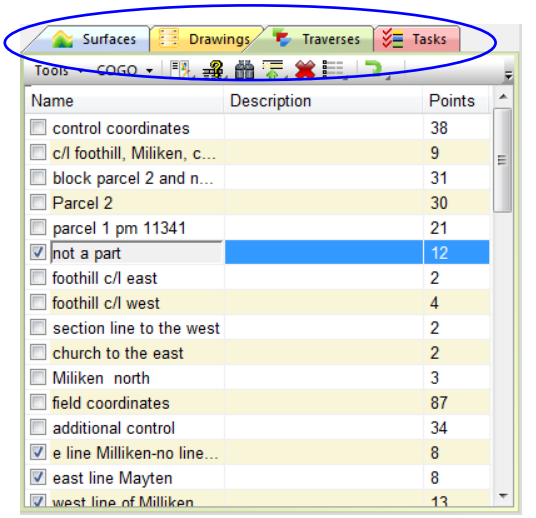
We built TPC on top of what we call ***Views***. They are the *heart and soul* of TPC. They provide unprecedented flexibility when it comes to working on surveys, yet they are simple to understand and use.

Views are centered around logical tasks, helping you organize your survey data and streamline your work. You do your drawings in the Drawing View. You check lot closures in the Closure View and enter vertical curves in the Vertical Curve View.

Each ***View*** displays its own menu and tool bars, making them context sensitive, efficient and easy to use. Expose just the data you want. That's why TPC Desktop is ***Better by Design.***

Managers

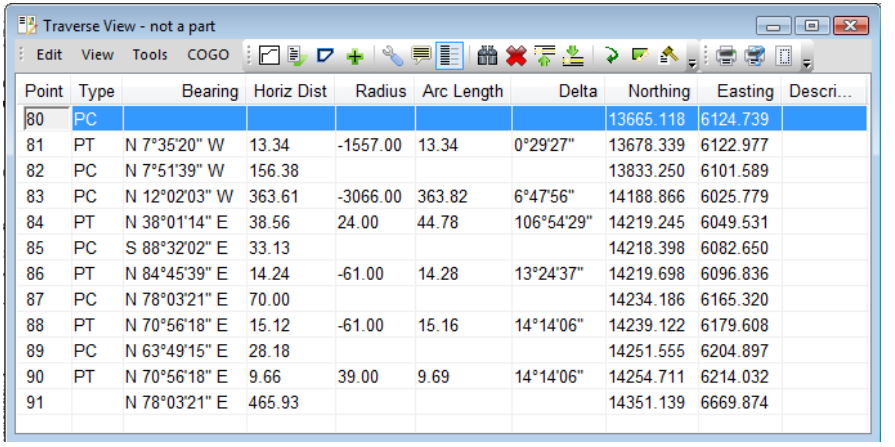
Some Views help you manage your survey data. These views are called managers, and are found in TPC Desktop's ***Manage*** menu and ***Navigation*** toolbar. They can be docked anywhere on the desktop where they provide handy access to the data they manage.



You'll find managers for Surfaces, Drawings or Traverses, Points, Point Codes, Drawing Data and Tasks.

Windows

Other views in TPC Desktop expose a specific type of survey data. These views are found in TPC Desktop's ***Window*** menu and the ***Navigation*** toolbar. They can be manually resized, tiled, cascaded or tabbed. As you work on your survey, you typically move these windows around, rearranging them in order to work more efficiently.



Point	Type	Bearing	Horiz Dist	Radius	Arc Length	Delta	Northing	Easting	Descri...
80	PC						13665.118	6124.739	
81	PT	N 7°35'20" W	13.34	-1557.00	13.34	0°29'27"	13678.339	6122.977	
82	PC	N 7°51'39" W	156.38				13833.250	6101.589	
83	PC	N 12°02'03" W	363.61	-3066.00	363.82	6°47'56"	14188.866	6025.779	
84	PT	N 38°01'14" E	38.56	24.00	44.78	106°54'29"	14219.245	6049.531	
85	PC	S 88°32'02" E	33.13				14218.398	6082.650	
86	PT	N 84°45'39" E	14.24	-61.00	14.28	13°24'37"	14219.698	6096.836	
87	PC	N 78°03'21" E	70.00				14234.186	6165.320	
88	PT	N 70°56'18" E	15.12	-61.00	15.16	14°14'06"	14239.122	6179.608	
89	PC	N 63°49'15" E	28.18				14251.555	6204.897	
90	PT	N 70°56'18" E	9.66	39.00	9.69	14°14'06"	14254.711	6214.032	
91		N 78°03'21" E	465.93				14351.139	6669.874	

You'll find windows that display a drawing, report, traverse, traverse closure and vertical curves.

The Traverse View is a good example. It exposes the traverse you double click in the Traverses manager. To switch to a different traverse, just double click it.

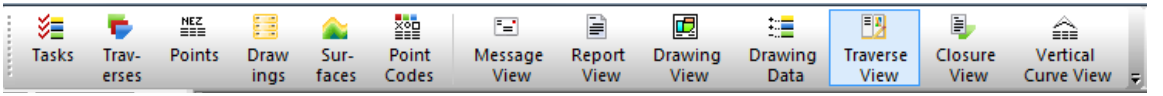
Introducing Obvious Navigation™

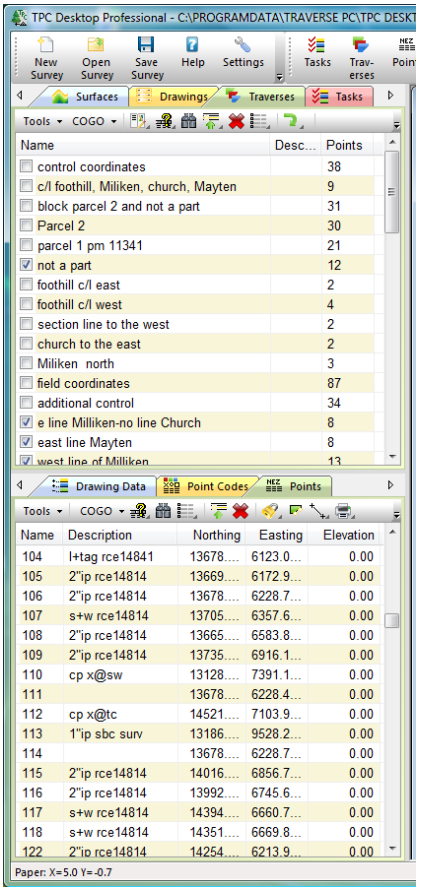
The TPC Desktop gives you easy access to the *Views* using what we call *Obvious Navigation*.

Let's face it, you run programs like spread sheets, word processors, picture editors, and other complex software. You don't want yet another program that's hard to learn; you want a powerful program that is easy to learn and use. This is where *Obvious Navigation* comes in.

The Desktop Navigation Toolbar

You'll start with the *Desktop Navigation Toolbar* at the top of TPC Desktop. If you want to open a drawing, just click the Drawings icon then locate the drawing you want and double click it. Open traverses and surfaces the same way.





Dockable Managers

Dockable Managers are the most efficient way to work with survey data that we have found to date. Think of them as *sticking* to your desktop where you want them.

In this example, we've docked the managers to the left side of the desktop, separating them into two tabbed groups.

Tabbed Views and Managers

Tabs let you organize your views and managers in groups. Tabbed views and managers share the same space on the desktop. To active one, just left-click its tab.

Tabs are a very efficient way to provide access to all your survey data all the time.

Auto-Hide

You may already be familiar with Auto-Hide if you have this feature turned on for your Windows task bar. Auto-Hide reduces any view to a button on the side of the desktop. When you want to use that manager, just position the mouse over it and it slides open for use. Pretty neat!

A survey isn't just data, drawings, COGO, or any ONE thing. It's the combination of record data, field data, intersections, curves, stations, offsets, control points, side shots, closing points, areas, corner notes, cut sheets, legal descriptions, contours, geodetic positions, setbacks and more. The list goes on.

So how do you keep track of something as complex as a whole survey? ***Traverses***!

A *Traverse* is any group of points that belong together. A *Traverse* can define a lot boundary or a feature line on a map or a group of points you want to download to your data collector. *Traverses* can be rotated and translated, copied and duplicated, turned on or off in a drawing, adjusted, and manipulated in all other kinds of ways.

Best of all, *Traverses* can share data. Update a point in one *Traverse* and it updates everywhere. Once you start working with *Traverses* in your survey you'll wonder how you ever lived without them.

Traverse Rules

A survey can have as few or as many *Traverses* as you want. If you are working with a subdivision, you will probably have a traverse for each lot in the subdivision. If you are staking out points on a construction project, you might have a *Traverse* for each building and one for miscellaneous points.

Keep in mind that you can always create additional traverses by recalling points from the survey. If you want to do something with selected points, just recall those points into a traverse and do it – at any time.

Some things you should know about *Traverses*

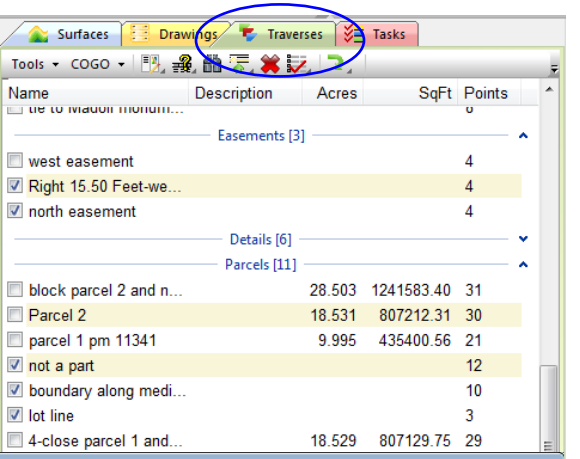
- *A survey can have any number of Traverses.*
- *A Traverse can have any number of points.*
- *When a new point is entered in a Traverse it becomes part of the survey.*
- *Any Traverse can access (recall and change) any point in the survey.*
- *If a point is changed in one Traverse, that change is reflected in every other Traverse that shares that point.*
- *Traverses can be easily created from most of the views.*

Traverse Drawing Settings

Traverse Drawing Settings make drafting fast, flexible and fun in TPC. Use the Traverse Drawing Settings to choose the point symbol, line type, color, point labels, line labels and other settings you want to use for a traverse and TPC creates the drawing for you. You can store Traverse Drawing Settings for re-use by giving them a unique name like **Property Line** or **Topo Shots**.

Managing Traverses

From the TPC Desktop menu, choose **Manage | Traverses**. TPC displays the Traverses manager.

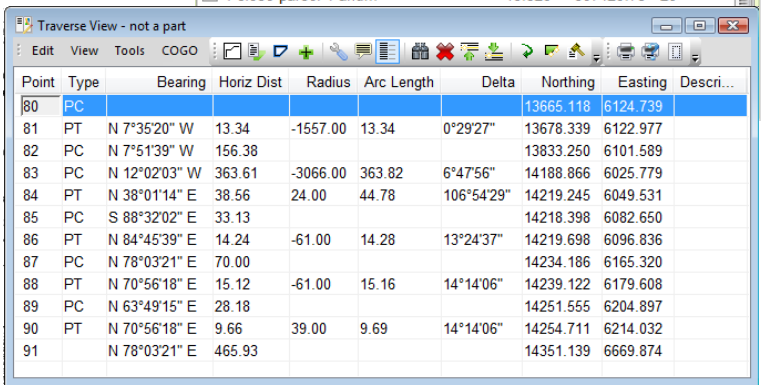


You can insert new traverses next to other traverses or append them to the end of the list. You can group similar traverses together. Make a copy of a traverse that shares the same survey points or duplicate a traverse so that it has its own unique survey points.

Most of the time however, you'll just double click a traverse to open it in a Traverse View.

Traverse View

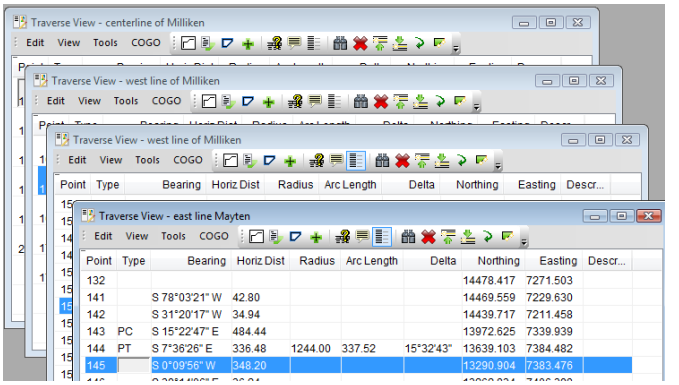
The Traverse View manages a traverse. You can enter, edit or recall points, change data entry formats, view and print the traverse.



You format the Traverse View to include the column sequence you want. Now enter your data and watch as TPC computes the points for you. Or recall existing points into a traverse to see their relationships (inverses). Display each point in a single row (as shown here) or use two rows per points like a conventional field book.

Multiple Traverse Views

You can have multiple Traverse Views open at one time, allowing you to compare record data with actual measurements or one deed against another.



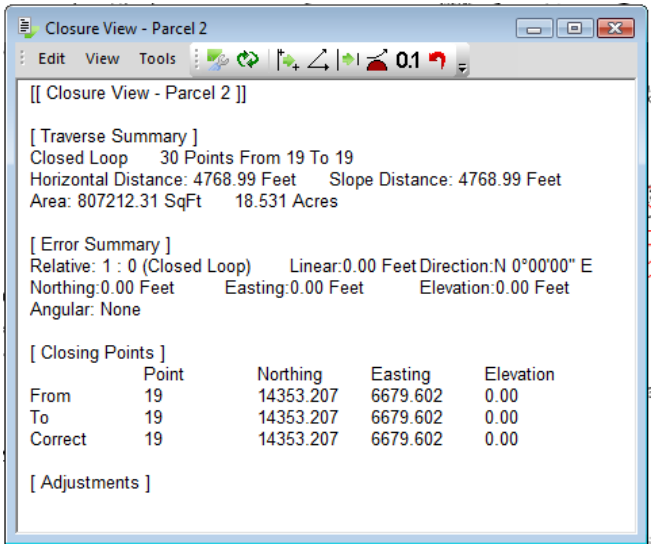
Traverse View Formats

With TPC, you do lots of things in the Traverse View. Having the right sequence of columns to display just the information you want is important, so TPC lets you save your favorite formats for re-use in any traverse. Give your formats unique names like GPS Points, Control 3D or Deed w/Curves.

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.*

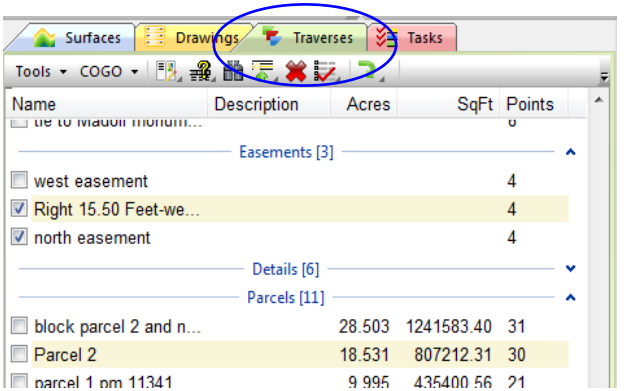
Adjusting Data

Often times, you will open the Closure View just to see if a traverse closes within reason. But you can also adjust a traverse in the Closure View. Adjust for curvature and refraction or balance just the angles. And if you don't get what you want the first time, just undo the adjustments back to the raw coordinates and try it again.

Network adjustments are not done in the Closure View. They are done using the Least Squares Network adjustment.

Including Closure Information in the Traverses manager

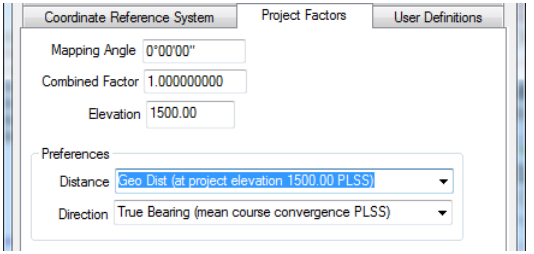
You can also include much of the Closure View information right in the Traverses manager where you manage your traverses. Include the relative error and area of each closed traverse. Print out the Traverses manager or send it to a CSV file you can import into a spreadsheet. Moving information out of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



Depending on the Edition you have, TPC can use different Distance and Direction types.

Survey Defaults

Each survey has a default **Distance** and **Direction** types. Once set, these defaults determine the initial types used by COGO dialogs, drawings and traverses. You can always override the defaults to change the way TPC computes or displays the data you are working with at the time.



The **Project Factors** dialog lets you set the default distance and direction types, plus specify project factors like elevation and mapping angle.

Grid

Grid distances and directions rely solely on cartesian coordinates and do not account for elevation, grid factors or convergence. For small surveys, these are generally adequate and simple to use.

Ground

TPC provides several types of ground distances that relate ground distance to grid distances using elevation and grid factors. You always know when you're using a grid distance and when you're using a ground distance.

Geodetic

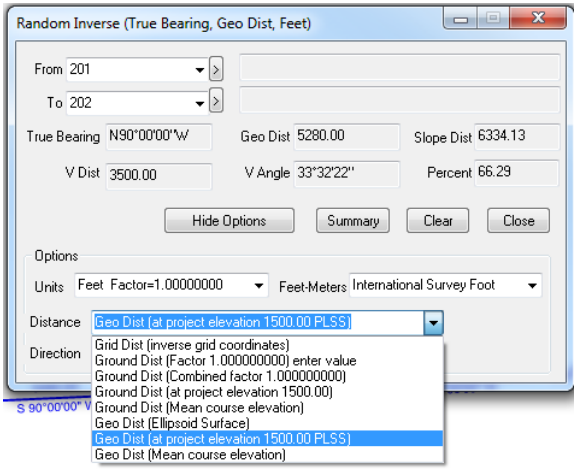
TPC provides a number of geodetic types to choose from. These use geodetic positions and equations to compute points (geodetic direct) and inverses (geodetic inverse). Geodetic tools are available only in the Professional Edition.

PLSS

Computations on the PLSS (Public Lands Survey System) is just a matter of choosing the appropriate distance and direction types.

Example COGO Dialog

Notice the **Random Inverse** dialog shown here.



- *The title bar tells you it is displaying **True Bearing**, **Geo Dist** (geodetic distance) and the units are in **feet**.*
- *The fields themselves indicate **True Bearing N90°00'00"W**.*
- *The pulldowns in the **Options** box tell which **Distance** and **Direction** are being used to compute the inverse.*

Let's face it. Those of you who have done Cartesian coordinate math forever think geodetics are just a little bit scary. Straight grid lines are easy to understand, but geodesics are curved with a unique direction at each end. No wonder they're scary.

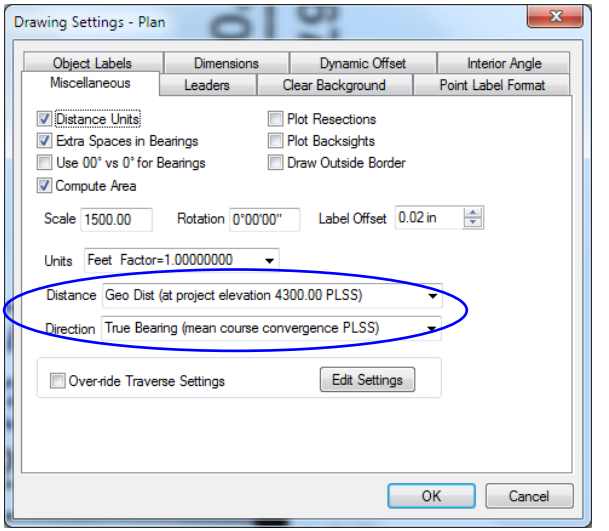
TPC takes the scary out of geodetics by boiling everything down to this - just tell TPC which distance and direction types you want to use anywhere in the program. It's that simple.

Traverse View

Just select the distance and direction types to use for any traverse. If you enter raw data like slope distance and zenith angle, TPC converts them to the appropriate grid, ground or geodetic types when it computes the foresight or sideshot. When displaying distances and directions, TPC starts with the coordinates and factors the inversed distance and direction to display the types you have selected for the traverse.

Drawings

Any drawing can display any combination of grid, ground or geodetic distances and either grid or true directions. TPC even includes drawing variables that automatically annotate your drawing with the distance and direction types being displayed.



COGO

Many COGO dialogs let you select which distance and direction types to use in the computations or display in the dialog and reports. These COGO dialogs display the abbreviated types in the caption bar. You will see something like 'Random Inverse (Geo Dist, True Bearing)'. This will help you identify which types the dialog is currently using.

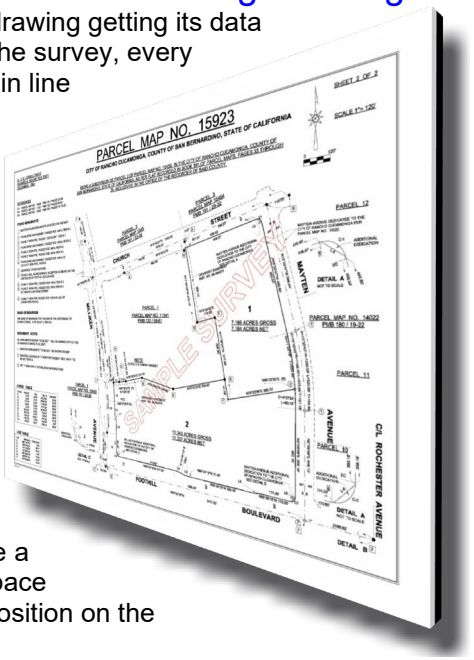
Some dialogs also include a **Show Options** button. Left-click this button to show the **Distance** and **Direction** pulldowns. Some dialogs also include a Units pulldown so you can change units on the fly.

Full Geodetic

TPC has all the geodetic tools for Direct and Inverse computations, cardinal offsets, latitudinal arcs, convergence, grid factors and everything else that goes with geodetics. But it simplifies it all down to the Distance and Direction types that you choose. Now that's taking the scary out of geodetics.

Geodetic tools are available only in the Professional Edition.

Surveys can have unlimited numbers of drawings, with each drawing getting its data from the survey itself. If you change the position of a point in the survey, every drawing that uses that point automatically reflects the change in line labels, point labels, and lot areas.



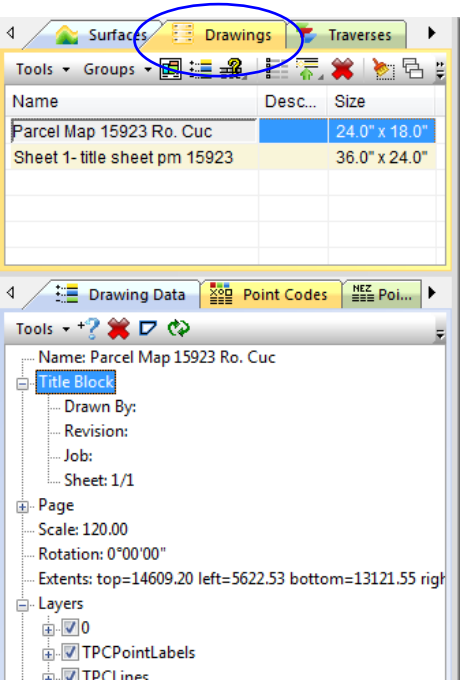
Each drawing remembers which traverses and surfaces are in it. To include a traverse in a drawing, you tag it in the Traverses manager when the drawing is active. To remove a traverse from the drawing, untag it.

Drawing Settings

Each drawing also remembers its own drawing settings like page size, orientation, traverse drawing settings, legend, title block, etc. You can also clear the background of all survey objects in a drawing, change the arrow type of all dynamic offsets and lots more by edit the drawing settings.

Drawing Templates

Drawing templates are also very easy to create. Just complete a drawing and save it as a template. TPC saves all the paper space objects, page size, orientation, scale, blocks and the survey position on the page.



Managing Drawings

From the TPC Desktop menu choose **Manage | Drawings**. TPC displays the Drawings manager. To open a drawing, just double click it. TPC opens that drawing in its own Drawing View.

- *Each drawing in the survey must have its own unique name.*
- *Only one drawing is open at a time in TPC – the Current Drawing.*

Drawing Data

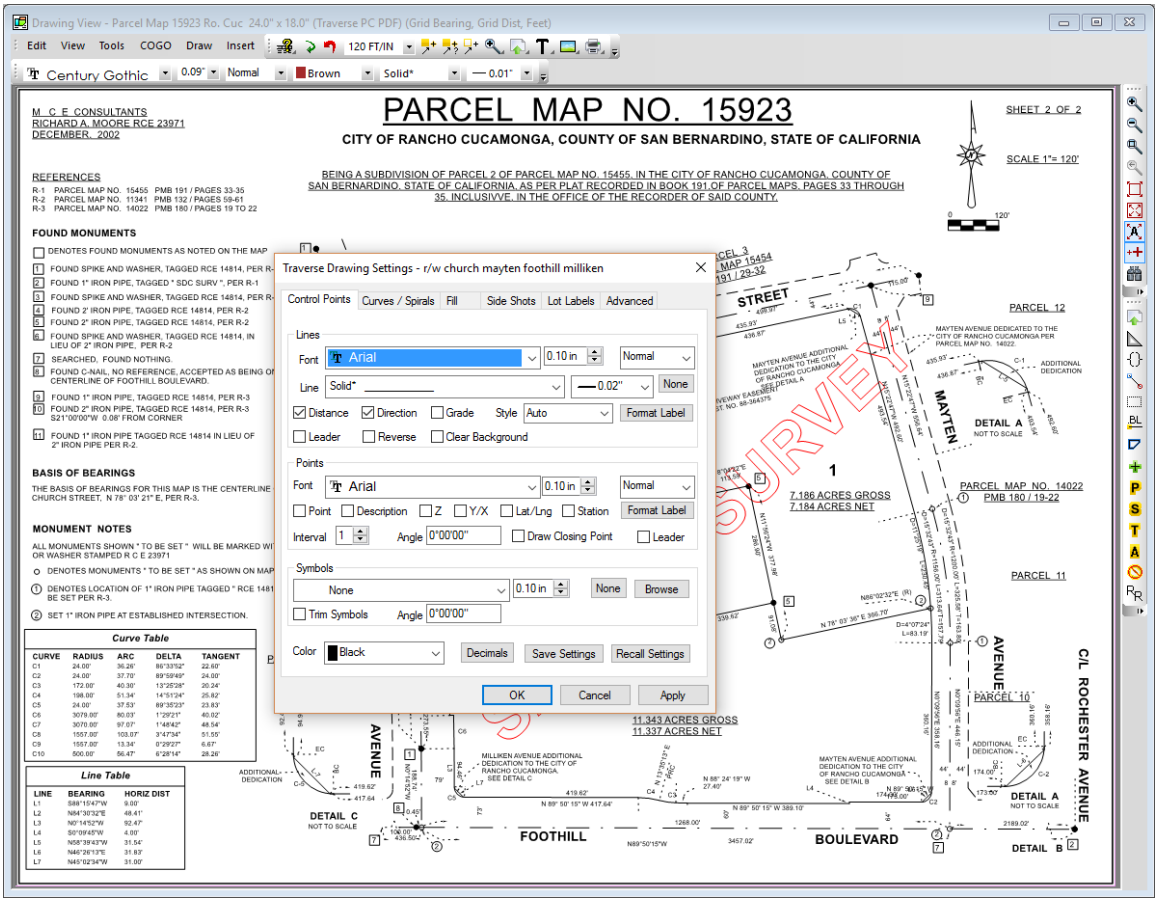
You can also access a drawing's data in the Drawing Data manager. The view exposes a drawing's data in a familiar tree structure, allowing you to edit objects or just turn them on and off.

Sharing Drawings

TPC lets you share drawings with other programs through file formats like DXF, DWG, DGN, PDF, PNG, Shape, GIF, TIF, JPG and others.

Introducing Quick View™ Technology

You will use our Quick View™ Technology to create finished drawings and also to display individual traverses while you enter your data. You select the line types, point symbols, text sizes, etc. that you want and the Quick View draws it. You can modify any object the Quick View™ draws, and you can add your own. In many respects, Quick View™ works like CAD, but we hate to call it CAD because it isn't limited by the many problems that CAD brings to drawing surveys.



It's Not CAD

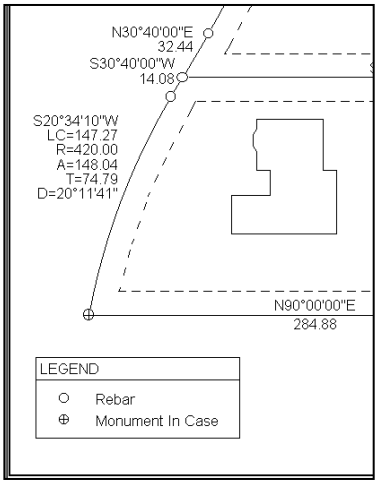
If you try to draw in TPC like you do in CAD you'll end up frustrated. Instead, let Quick View™ do your drawings for you. You'll learn how the Traverse Drawing Settings create the drawing for you, typically 90% of it. Start with a drawing template, choose your Traverse Drawing Settings then change the objects that are different from the rest, add some text and you're done. Drawing in TPC is much, much faster than it is in CAD and a lot more fun.

Introducing Smart Drawing Objects™

Smart Drawing Objects help you produce drawings quickly and maintain them effortlessly. TPC Desktop includes dozens of Smart Drawing Objects. Here are two examples.

Smart Legends

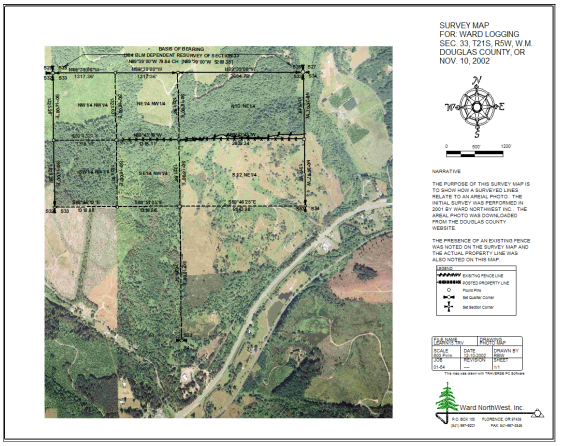
By default, the legend adds symbols automatically as they are used in the drawing. In the drawing shown here, we changed the SW lot corner to the **Monument In Case** symbol, so Quick View™ added it to the legend. Plus the legend is anchored to the nearest corner of the drawing so as items are added it *grows* away from that corner automatically – you don't even have to reposition it.

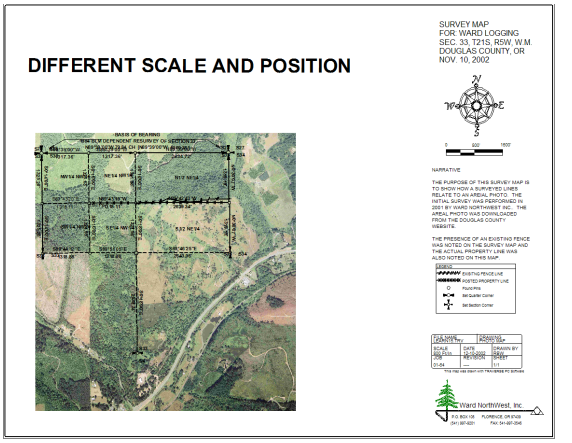


Smart Pictures

Once you have calibrated a picture you can rescale the drawing or drag-n-drop the survey anywhere on the page, and the picture and survey retain the proper reference to each other. That's because they are smart.

One of the neat things about Survey Space is that ALL Survey Space objects are based on the same coordinate grid and the same scale – even pictures.

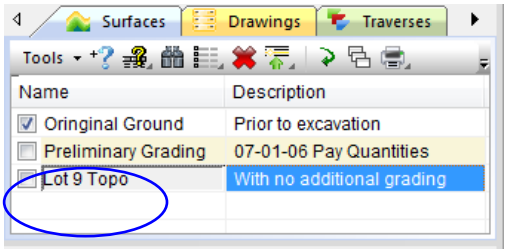




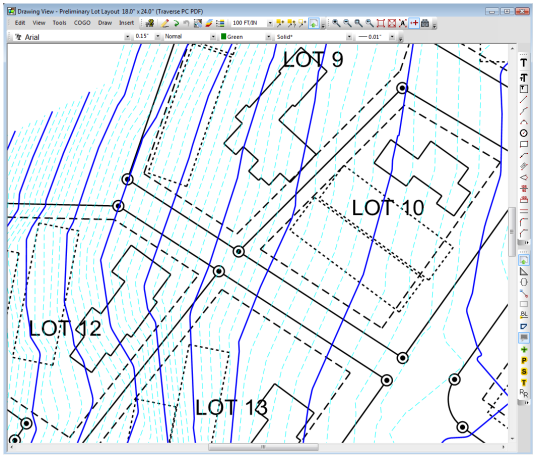
In TPC Desktop, surfaces are part of your survey, just like traverses, points and drawings. You create a surface, give it a unique name, specify the contour intervals, edit breaklines, etc.

Managing Surfaces

From the TPC Desktop menu, choose **Manage | Surfaces**. TPC displays the Surfaces manager.

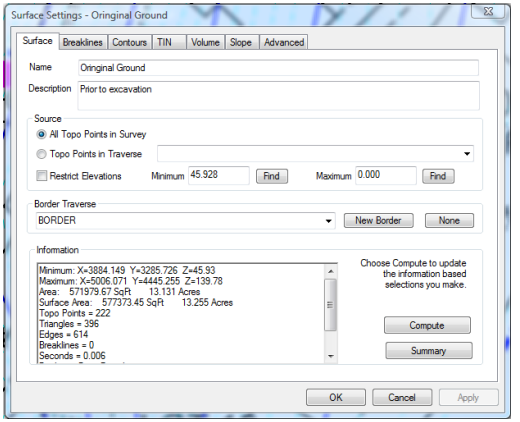


- *To include a surface in any drawing, just tag it (check the box).*
- *To edit a survey, just double click it.*



Surface Settings

Each surface has its own settings that determine how the surface is computed and drawn. Surfaces take advantage of TPC's Quick View™ just like traverses. So just tell the surface how you want to draw it and Quick View™ does the rest.



Surfaces can also have settings that are unique to a particular drawing. Maybe you want to show 1' contour intervals in one drawing and 5' contour intervals in all the rest. Not a problem, just tell TPC that you want to use unique settings for this surface in this drawing, then set the contour interval, colors, smoothing, layer names, etc. just the way you want them.

Fast Contouring Editing

TPC computes surfaces at 10,000 points per second on a typical computer. It is very efficient. So what's the benefit to you? You can edit surfaces live, on the fly, real time. You get the picture. Add or remove points, add or remove breaklines or change the border and watch the surface change as you do it. You will really love this feature of TPC's surfaces.

Volumes, Slope Analysis and More…

Depending on the edition you have, TPC can also compute volumes, analyze the slopes, generate cut/fill notes, compute transects, transpose a traverse's elevations onto a surface and lots more.

TPC Desktop provides two ways to draw your maps from your field data – *Point Codes* and *Drawing Codes*. You are free to use either one.

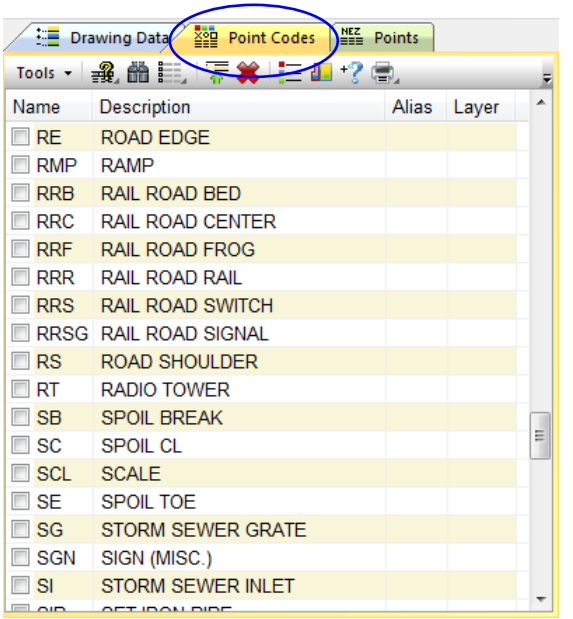
Point Codes are number codes or abbreviations used to identify points in the survey. They are typically short to facilitate coding in the field and may or may not be descriptive of the points (i.e. 121=Oak Tree, 245=3 port fire hydrant, TOE=toe of slope, CLF=Chain Link Fence, etc.).

TPC uses the codes to sort points into traverses. All the points with the CLF code end up in the Chain Link Fence traverse, all the Oak Trees are in their own traverse, etc. When you plot the individual traverses, you've got a site map.

Point Codes are only available in the Professional Edition.

Point Code manager

The Point Code manager manages your point codes. You can create traverses for all the codes or just the ones you want. You can standardize your *Point Codes* plus easily add any new ones you used that day.



Name	Description	Alias	Layer
RE	ROAD EDGE		
RMP	RAMP		
RRB	RAIL ROAD BED		
RRC	RAIL ROAD CENTER		
RRF	RAIL ROAD FROG		
RRR	RAIL ROAD RAIL		
RRS	RAIL ROAD SWITCH		
RRSG	RAIL ROAD SIGNAL		
RS	ROAD SHOULDER		
RT	RADIO TOWER		
SB	SPOIL BREAK		
SC	SPOIL CL		
SCL	SCALE		
SE	SPOIL TOE		
SG	STORM SEWER GRATE		
SGN	SIGN (MISC.)		
SI	STORM SEWER INLET		

Then assign Drawing Settings to each code, telling TPC which symbol, color, annotations and so on you want to use when you draw each code.

Creating Traverses from Point Codes

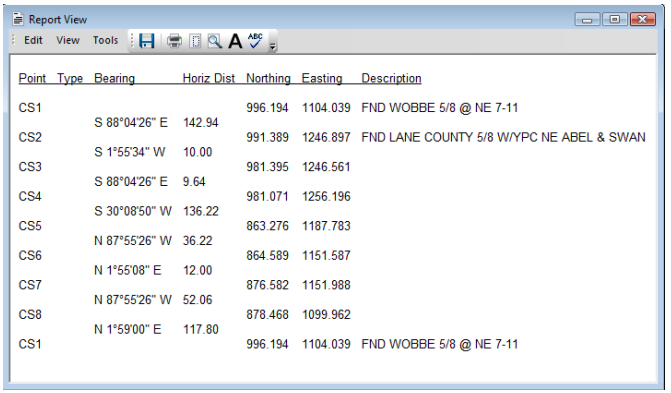
The traverses you create from point codes can also be updated to include new points you add to the survey. Just choose **Tools | Sort Points Into Traverses by Code**. If you collect more data, you can easily add the new points to the existing traverse by choosing **Tools | Update Existing Point Code Traverses**.

Drawing Codes

TPC Desktop also understands *Drawings Codes* like .BL for *Begin Line* and .EL for *End Line*. They are fully customizable and provide a field to finish alternative to *Point Codes*. Your field data can incorporate *Drawing Codes* either in the point descriptions or Note records.

Report View

You can add data to the report view then print it out anytime. It has a built in word processor so you can copy and paste text from other views like the Closure View and from many of the dialog boxes like the Intersection, Random Inverse, and Horizontal Curve dialog boxes. This is a great way to put together a report with just the information you want. You can save multiple reports and open them in a word processor for spell checking or other use.



Specialized Reports

TPC comes with many specialized reports ready for you to use.

The Stakeout Report lists each staked point compared with its design point. You have a complete record of what you staked when and how.

You'll also find specialized reports for traverse adjustments, least squares adjustments, legal descriptions, imported data, traverse closures, stations and offsets, line posting and lots more.

COGO Summary Button

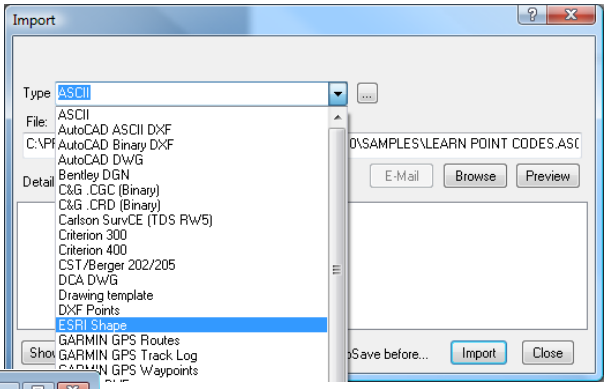
Many of the COGO dialogs include a **Summary** button like the one shown here. Your computations are added to the current report, creating a record of what you did in the survey.

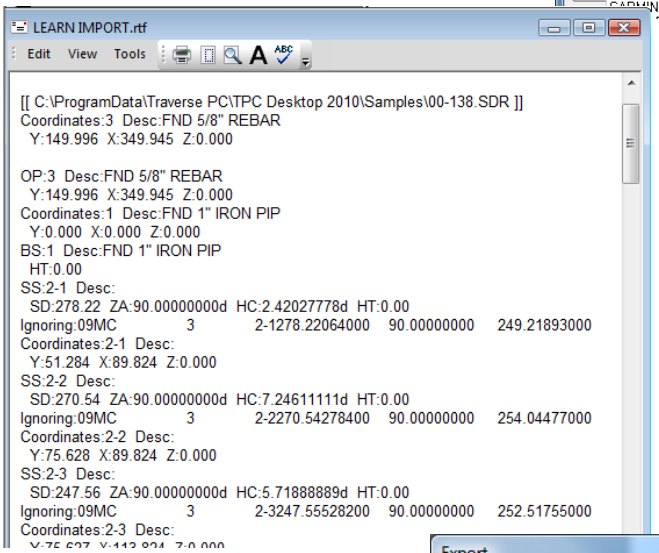
Message View

The Message View displays any warnings or other information you need to know about operations you are performing. When you import data from your data collector, the Message View can display each line of data in an easy-to-read format – print it out and you've got a hard copy of your field data. If you try something TPC doesn't allow, it tells you why.

TPC supports the most popular data collectors, GPS and total stations directly. You can connect directly to the device via a serial port or transfer data files via Active Sync then read the files directly.

The advantage of using TPC is that all these formats are built right in. You don't need to purchase and learn the software from each manufacturer when TPC can do the work for you.





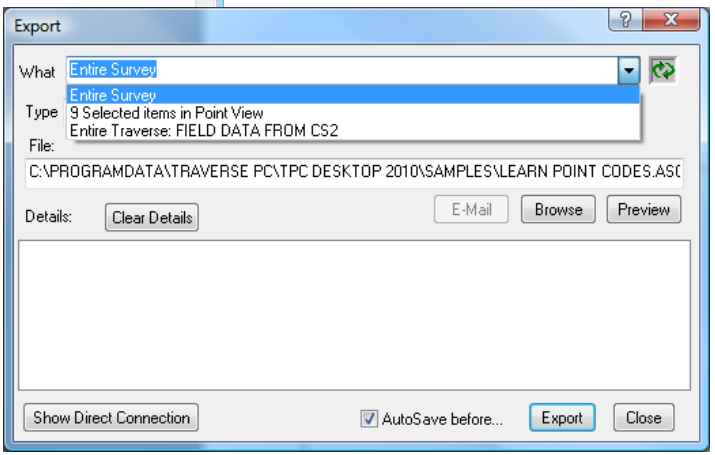
Reviewing the Imported Data

One of the benefits of using TPC to import data from your data collector is the detailed report TPC gives you. When you turn on **Details** in the **Settings** dialog for any of the supported file types, TPC displays every record of data it reads in the Message View. The data is formatted so it is easy to read and can be printed out like field notes.

Exporting Data

From the TPC Desktop menu, choose **File | Export**.

It's easy to export just the data you want by selecting it in a view then using the ***What?*** list to specify the exact data to export.



You'll find lots of coordinate geometry (COGO) tools available in TPC Desktop. Most of the COGO tools have a dialog box that pops up, allowing you to enter the information you know, and compute the information you don't know. Everything is built right in and you can press F1 from any dialog box to get on-line help about the tool and each of the fields in the dialog box.

TPC lets you select the COGO tools you want to use at the time you want to use them. Many of them, like horizontal curves, can be used right in the Traverse View as you are entering data (if you choose). Others are available as commands in the COGO menu.

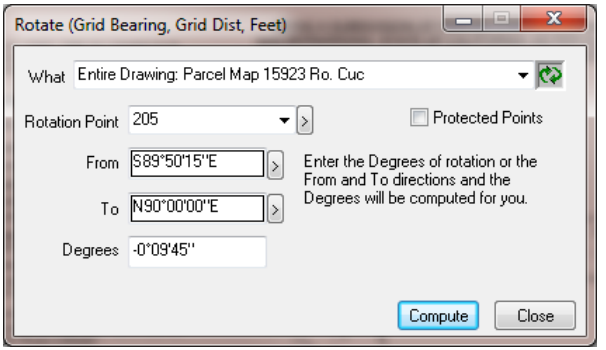
Some of the COGO tools, like extending the tangent coming out of a curve or spiral or inserting a mid-point happen without any special COGO commands, saving you lots of time and effort.

Recalling Data Using Equations

To recall data that can be defined by any currently existing points, use an equation. For instance, to recall the bearing between points 11 and 12, type 11..12 in the bearing field and press Enter. To recall the elevation of point BM14, type BM14 in the elevation field and press Enter.

Picking COGO Points, Lines and Bearings

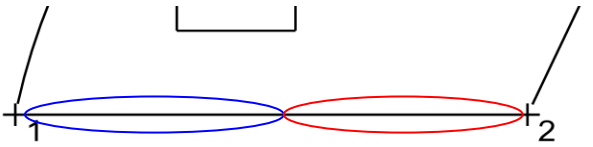
The pick buttons [>] circled here in the **Rotate** dialog let you pick COGO points, lines and bearings from the current drawing.



Instead of entering a **Rotate Point** to recall, click the [>] pick button then left-click the point you want in the current drawing.

To pick a point in the current drawing, left-click the point's symbol, label or any survey line that connects to the point.

If you pick a survey line, be sure to click the end of the line nearest the point you want, like the blue section for point 1 or the red section for point 2 as shown here.



Predictive Data

You can also just start entering point labels and TPC will list all the points that match – automatically. We call it *Predictive Data Entry* and it's great for COGO

TPC uses the term *coordinate points* or just *points* to refer to a location defined by a point label, northing, easting, elevation and description. The *points* may be used in a *traverse* but do not have to be.

Point Rules

TPC has a few rules about points that you must follow:

- *Point labels can contain numbers, letters, and symbols in any combination.*
- *Each point label in the survey must be unique. TPC identifies each point by its point label, so there can be only one point 200, only one point 201, etc.*
- *TPC creates new unique point labels from existing point labels by adding a colon and a unique number to the new point. If TPC duplicates point A1, it tries to name it A1:1. If the survey already has a point labeled A1:1, TPC tries to name it A1:2, etc. In this way, the point label is unique, but you know that it is related in some way to point A1. You may edit any point label at any time.*

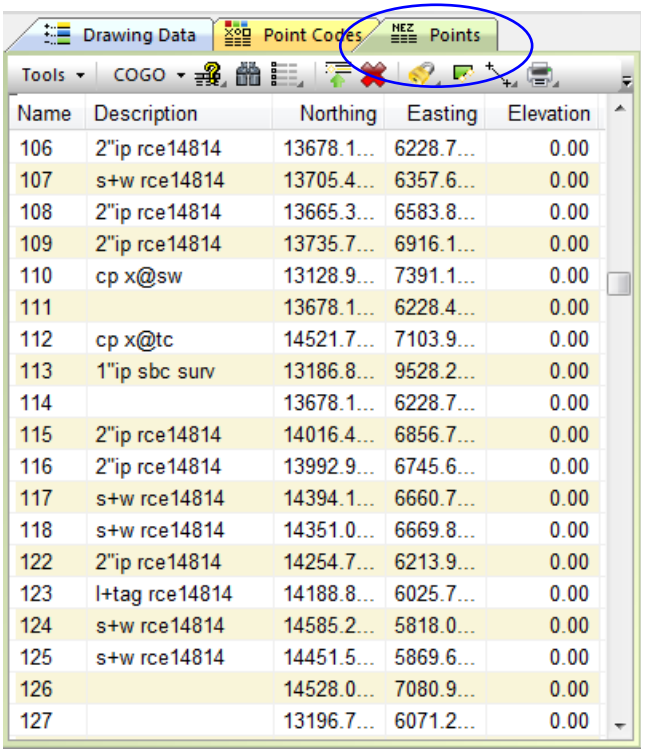
Point Descriptions

Each point in the survey can have its own point description. These are the field notes you might otherwise enter on the right-hand side of your field book.

Descriptions can be alpha or numeric characters.

The field notes are saved with the coordinates of each point when you save a survey file.

The Description field is also where Point Codes are entered for each point.



Name	Description	Northing	Easting	Elevation
106	2"ip rce14814	13678.1...	6228.7...	0.00
107	s+w rce14814	13705.4...	6357.6...	0.00
108	2"ip rce14814	13665.3...	6583.8...	0.00
109	2"ip rce14814	13735.7...	6916.1...	0.00
110	cp x@sw	13128.9...	7391.1...	0.00
111		13678.1...	6228.4...	0.00
112	cp x@tc	14521.7...	7103.9...	0.00
113	1"ip sbc surv	13186.8...	9528.2...	0.00
114		13678.1...	6228.7...	0.00
115	2"ip rce14814	14016.4...	6856.7...	0.00
116	2"ip rce14814	13992.9...	6745.6...	0.00
117	s+w rce14814	14394.1...	6660.7...	0.00
118	s+w rce14814	14351.0...	6669.8...	0.00
122	2"ip rce14814	14254.7...	6213.9...	0.00
123	l+tag rce14814	14188.8...	6025.7...	0.00
124	s+w rce14814	14585.2...	5818.0...	0.00
125	s+w rce14814	14451.5...	5869.6...	0.00
126		14528.0...	7080.9...	0.00
127		13196.7...	6071.2...	0.00

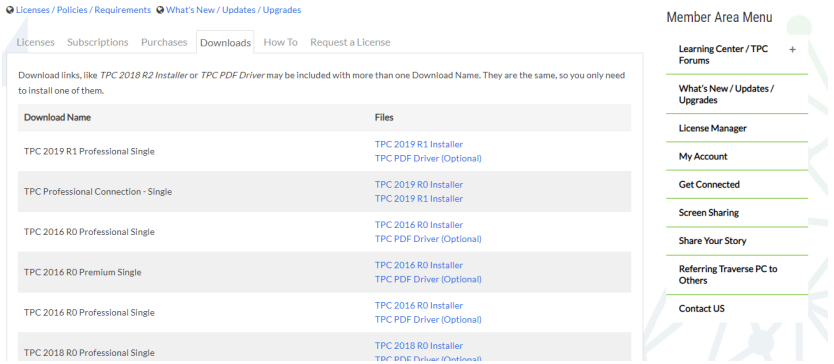
Points manager

The Points manager manages all of the points in the survey. It lists the points in the survey, sorted numerically and alphabetically. You can also sort by Northing, Easting, Elevation, or Description or combine them for multi-level sorts.

Use the Points manager to select certain points for printing or exporting. Use the search and replace tools to update point descriptions, enter corrected elevations, re-label points and lots more.

License Manager

You manager your license and get your downloads on-line, in our License Manager (login required).



License Types

You choose the license type you want – subscription or perpetual.

License Validation

Each time you run TPC, it checks for a valid license and displays the license information in several places. As you run TPC, it will periodically re-check the license in the background.

If a license cannot be validated, TPC will not run.

30-day Grace Period

If you have validated TPC then take your laptop into the field where there is no internet, TPC automatically starts a 30-day Grace Period, so you don't miss a beat. Next time you are back in the office or somewhere where you have internet, TPC resets the grace period so you get the full 30-days the next time it happens.

Validating TPC Desktop

Any time you run TPC prior to validating it, you will see the **Program Validation** dialog.

Enter your name and validation key found in the License Manager's **License** tab.

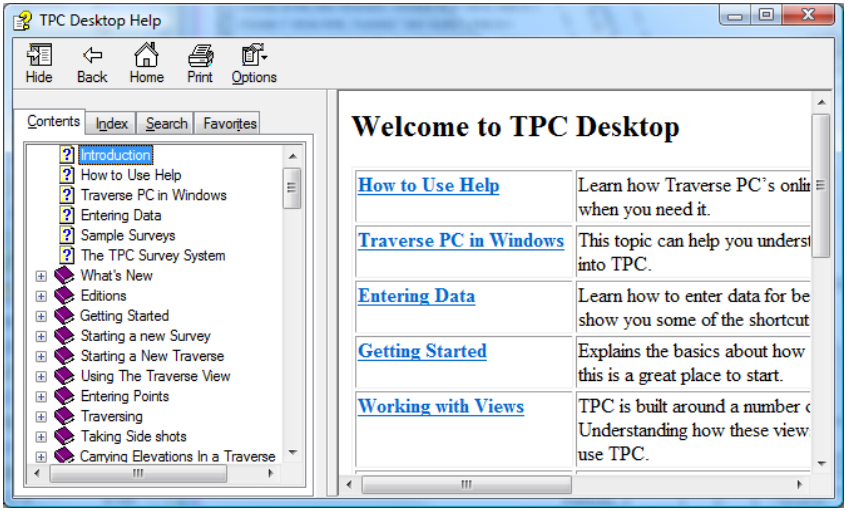
Notice the **Manage License** button in the dialog, providing you quick access to the License Manager.

New to TPC Desktop?

If you are new to TPC Desktop, choose **Introduction**. You'll find general discussions about views and getting started as well as sample surveys you can open and explore.

The Help Contents

All of the help topics are listed in the help contents in a logical book and chapter sequence. To access the help contents, choose the **Contents** tab from any of the help screens or select **Help | Search for Help On…** from any view and choose the **Contents** tab.



The Help Index

All of the help topics are listed in the help index based on keywords. To access the help index, choose the **Index** tab from any of the help screens or select **Help | Search for Help On…** from any view and choose the **Index** tab. The topics are arranged alphabetically based on the indexed term and can be displayed one at a time.

Searching for Help

You can search for any word or phrase in the help files. You don't need to know what heading it comes under, you just need a word or two describing what you are looking for. To access the search function, choose the **Search** tab from any of the help screens or select **Help | Search for Help On…** from any View and then click on the **Search** tab. Type a word or phrase and then choose **List Topics** to view a list of results. Click the topic you want and choose **Display**.

Getting Help with Commands

Every command has its own help screen. Highlight the command in its menu and press [F1] or press [F1] while holding down the left mouse button over any button on the toolbar. You may want to take advantage of this feature to browse through the commands as you learn TPC.

Getting Help with Dialog Boxes

Every dialog box has its own help screen. Press [F1] with the dialog box displayed and TPC shows you the appropriate help topic with descriptions of each field and button. You may want to take advantage of this feature to browse through the commands as you learn TPC.

Messages

TPC uses pop-up messages to inform you of errors and warn you of possible problems. If you press the wrong key, the data you entered is not right for some reason, the option you just selected changes your current data or if TPC can't find some information it is looking for, TPC pops up a warning message and tells you what to do.

Usually you can simply read the message and press any key to continue. When appropriate, TPC will display a message and ask you to choose from a list of options.

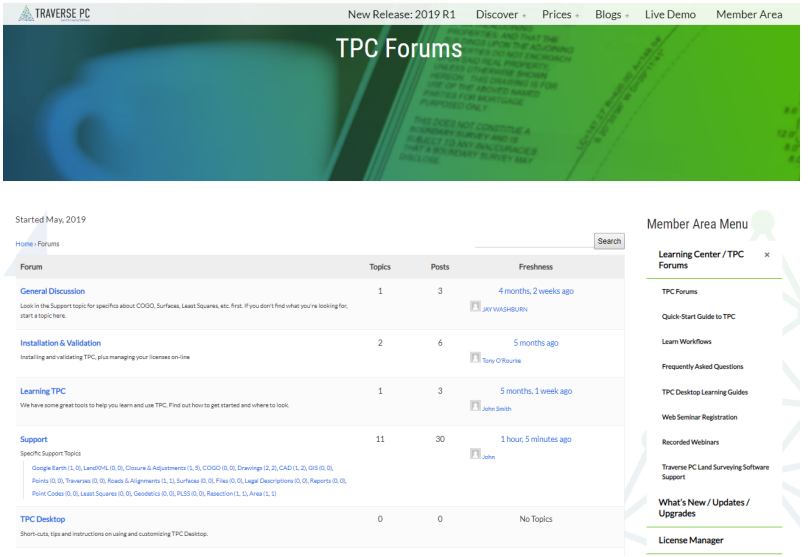
Messages that are displayed in the Message View are also stored there. If you do not choose **Tools | Clear View**, the messages will continue to pile up and you may become confused about what TPC is telling you.

Learning Center

Our TPC Learning Center has it all. Everyone learns differently, so we provide videos, learning guides, help topics and lots more. Find what works for you.

TPC User Forum

Get help 24/7 from TPC's tech support staff and other TPC users at the TPC Forums (login required).



Technical Support

Technical Support is available either through an annual subscription we call the TPC Connection. But since less than 20% of our users ever call for support, you may never need it.

Best of all – it's your call!