

Trimble Survey Controller Procedure Sheet

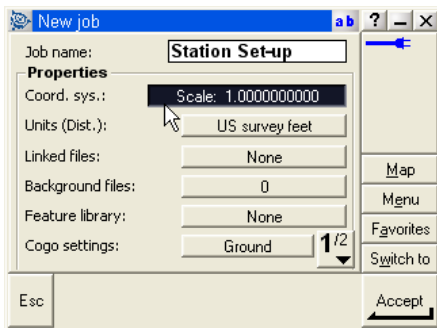
Working with Total Stations and Trimble Survey Controller

Create a job on the Controller:

-Turn on your Controller and go into Survey Controller Software



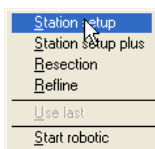
-Create a new job by going into Files/New Job



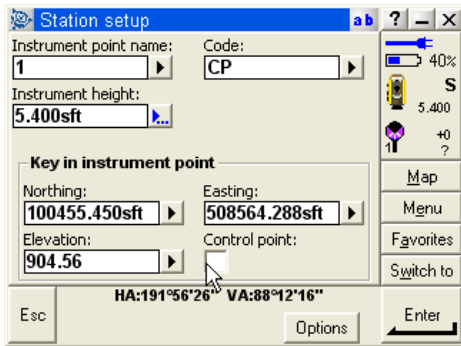
-Note to set the Scale Factor to 1.0 when working with a Total Station. Hit Accept to create your new job.

-Standard Station Set-up:

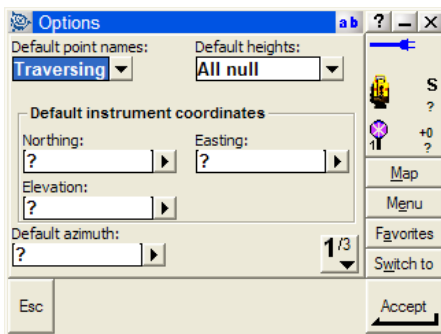
-Now, after you have created your job, go to Survey/Station set-up to orientate your instrument.



-Type in the point name of your instrument point. If the point is already in the data file, then the coordinates will fill in at the bottom of this page. If this point is a new point in the job, you will be prompted to key in the coordinates. Key in the values that are pertinent to your survey.

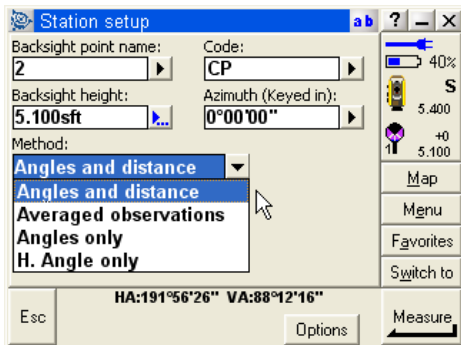


-Use the Options button at the bottom of the Station Set-up Screen to select between how you want to auto number the point names, and choose Traversing to allow Survey Controller to place the correct point name in the Instrument Point Name field when Traversing.

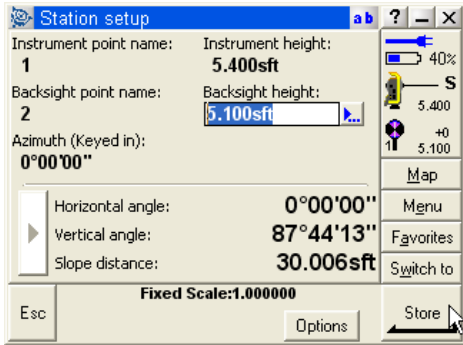


-Hit Accept to save these options.

-Accept your values and you will now be prompted for the backsight reading. Note that you can measure a backsight point by using the “Angles and Distance” method, or just a backsight angle by using the “Angles” method. For Traversing, you should always measure using the “Angles and Distance” method.



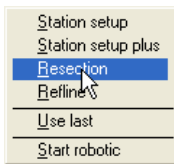
Measure and Store your Backsight!



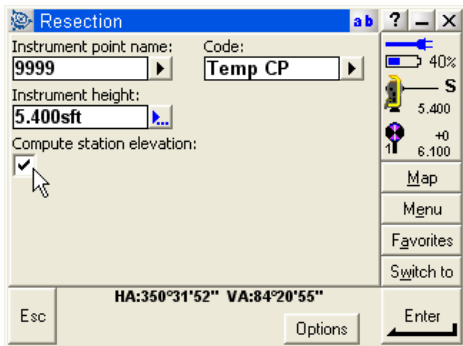
-Your Station Set-up is now complete!

-Alternative Station Set-up –Resection:

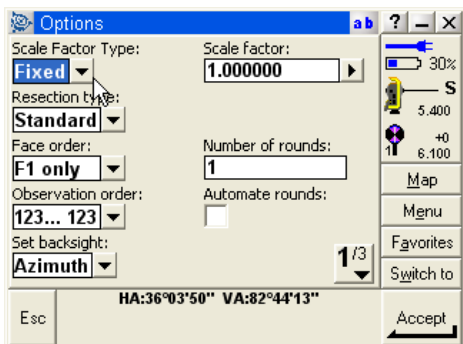
-Go to Survey/Survey Style (e.g., S Series=S6 or 5600 Series=5600 Total Station)/Resection



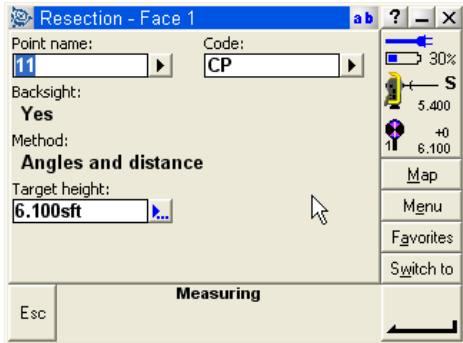
-Now key in a point name (new point) that you want to compute the resection to. Make sure to check “compute elevation” if you want the Resection to compute an elevation for your instrument point.



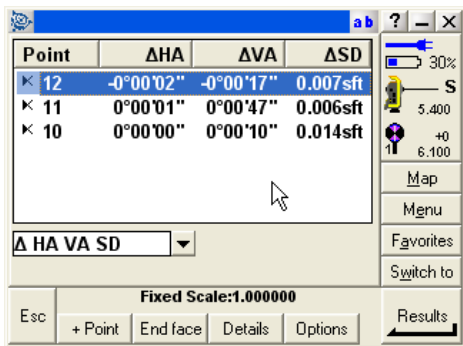
-Hit the Options key to make sure you are performing a Fixed Resection type.



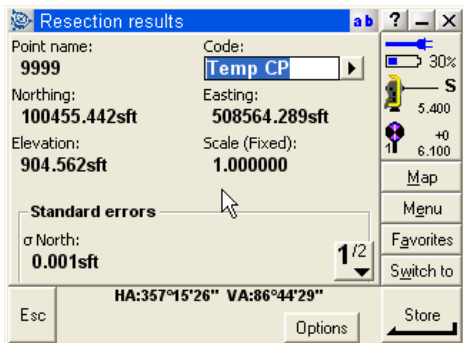
-Accept your point name, and select the first points name for the first point to be measured in the Resection. Repeat this step for each point to be measured. *Note: A 2 point resection can be calculated by the Trimble Survey Controller, however, Trimble and Frontier Precision, Inc. recommend to use at least 3 points to calculate a good resection.



-Once at least 2 points were measured for the Resection, you will get the Resection Residuals Screen. This screen will display which points were measured and how well the Resection has been calculated. You can get more detailed information on each measurement by highlighting the point of interest and hitting the details softkey. You can also add more points to the Resection by clicking on the +Point softkey.



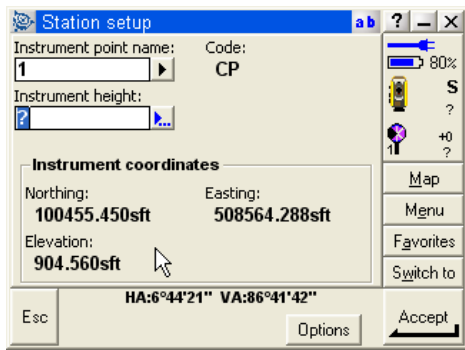
-When you have measured to the points of interest, you can hit the Results key to see the results of the Resection. The Results will also include the coordinate values of the Resected Point. Hit Store to accept the Resection.



-Your Resection is now Complete!

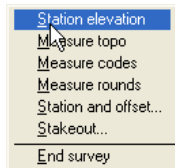
-Alternative Station Set-up –Station Elevation:

-Create a new job as explained above. After job creation, go into Survey/Pick your Survey Style/Station Set-up.

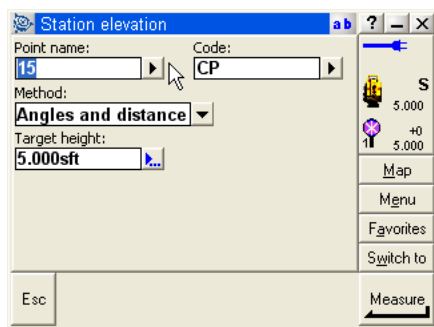


-Select a Point name for the Instrument. Note that you do not need an elevation on the instrument point, as you are going to use the Station Elevation routine to transfer that vertical elevation to the instrument during this procedure. Accept the Instrument point, and measure the Backsight as directed above in the “Standard Station Set-up” outline.

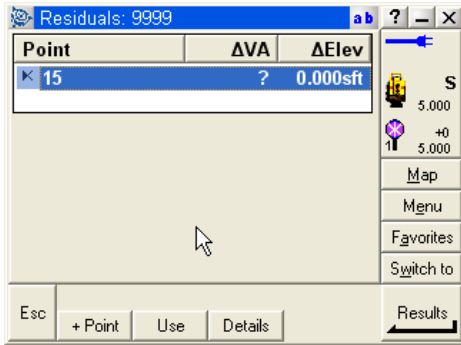
-After your Station Set-up is done, you need to go into Survey/Station Elevation.



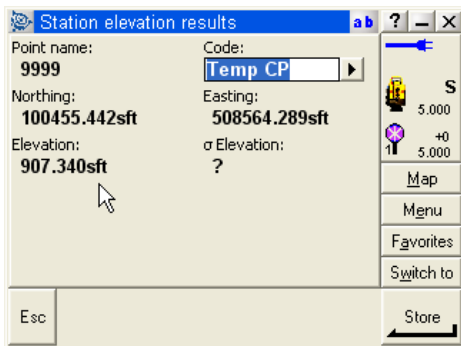
-In the Station Elevation screen, confirm the Instrument Point that you are still set-up on, and hit Accept. Now select or Key In the Point that you are referencing to for the know elevation.



-Measure to the point of interest, and you will get the Station Elevation Residual Screen as outlined below. Notice, you can use the + Point to add another point to calculate the Station Elevation.



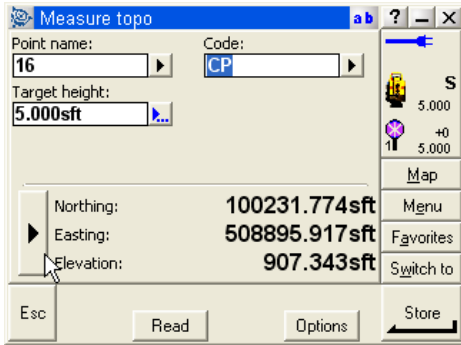
-Hit the Results screen to Store the Observation and the new Elevation of your Station will now be displayed.



-Hit Store to accept the new Vertical result. Now you are elevated from a Remote Benchmark.

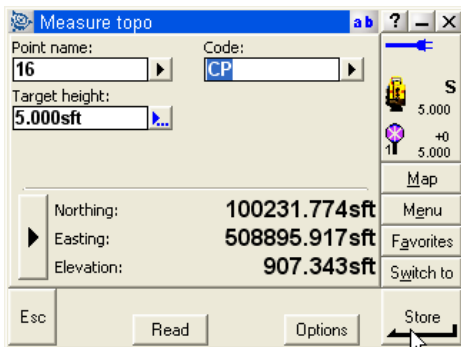
Alternatively, you can use the Survey Controller Basic, (from the Main Menu select Instrument/Survey Controller Basic, toggle with the arrow to the Elevation Screen) to look at your real-time Elevation. If you are using a Trimble 5600 or S6 Instrument, you can put the Instrument in TRK Mode to see the elevation change as you move around your project site.

Alternatively, you can also go into Measure Topo (from the Main Screen select Survey/Measure Topo. You must place the Instrument in TRK mode to toggle the view to Elevation) to see the elevation change as you move around your project site. Do not hit store unless you want to store a point for any particular shot.

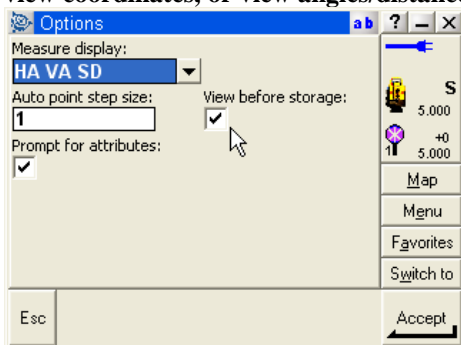


-Topo Measurement:

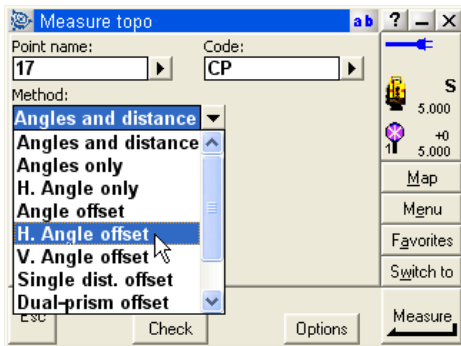
-After your Station is set, you can now measure topography. This is done by selecting Survey/Measure Topo. In the Topo screen your default is to Measure Angles and Distance. This allows the user to measure and store a basic radial sideshot with the prism.



-Note the Options key to select if you want to Auto-Store Points, or if you want to change the code, view coordinates, or view angles/distances for each measurement.

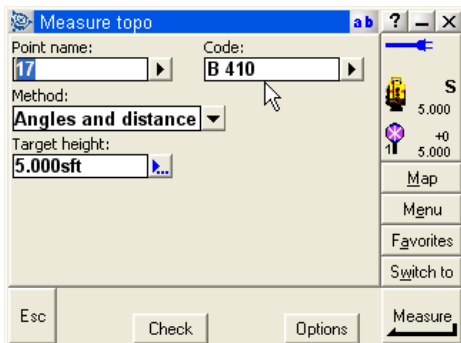


-Also in the Measure Topo screen you have the ability to measure offsets. Hitting the down arrow in the Method field will allow the user to Measure Angle Offsets, Distance Offsets, or Height offset points.

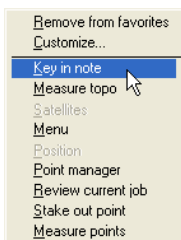


-Linework Codes For Land Desktop or Civil 3D

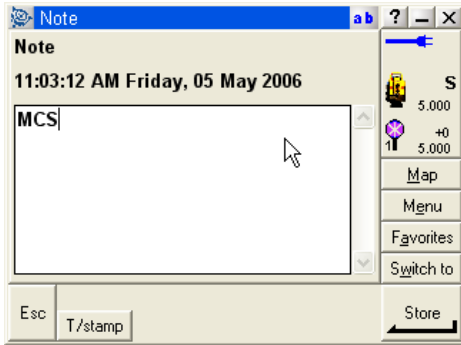
-In the Code field use the B command for Begin of a line segment, E Command to End a line segment, and CONT command to Continue a Line Segment. The special command codes of MCS (multiple curve start) and MCE (multiple curve end) can be used as well, but must be used using the Note field. This is common among data collection types, as the Fieldbook file accepts these and places them properly for the linework. Here are the screen snaps showing how to use the MCS and MCE curve commands.



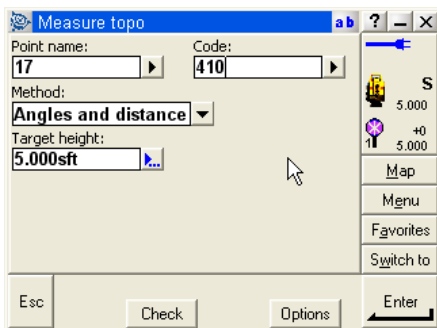
-Denotes collecting a sample start of a line using the “B” command.



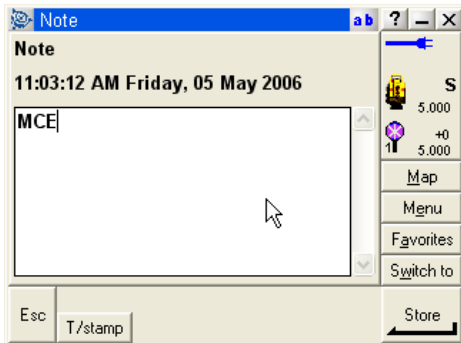
-To use the MCS or MCE command, you will have to use the Note field. Before the first shot for the multiple point curve, click on Favorites/Key in note. This will bring up the Note field. Type in MCS for multiple curve start.



-Hit the Enter key or the Store button to accept the MCS note for your fieldbook. Now either Esc back to Measuring Points or the Measure Code screen or use the Switch to command to toggle back to your Measure Screen and start measuring the points along the curve.



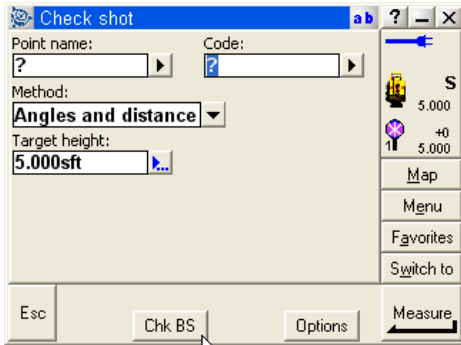
-Now you can continue measuring your points on the Curve. Repeat these shots until the curve has been collected. Once this is done, use the Favorites or Switch to Command to go back into Key in note.



-Now type in your MCE command and Store that value to end your multiple point curve. Esc or Switch to back to your Measuring screen to continue the survey.

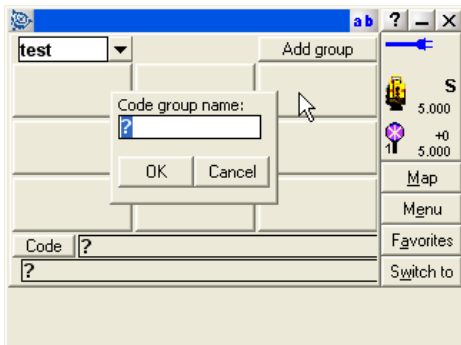
-Checking shots:

-Lastly in the Measure Topo Screen, you have the Check softkey. This allows you to Check a previously measured point or check the backsight. Just hit the Check BS softkey to measure and store a check shot to the backsight.

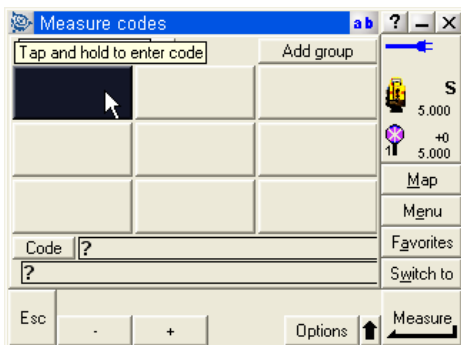


-Alternative Topo-Measure Codes:

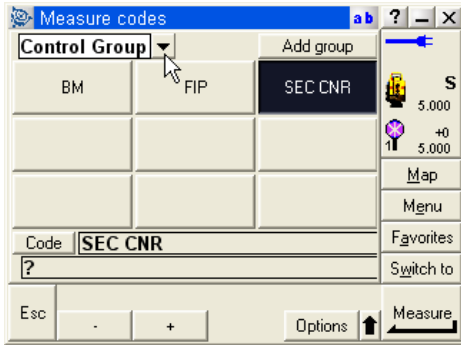
-Another new method of collecting topo measurements is by using the Measure Codes Features. Select Survey/Measure Codes to use this new collection routine.



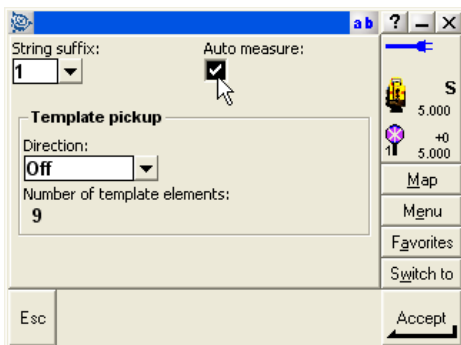
-Click on Add Group to create a group of up to 9 Feature Codes. Note that you can give it a name that is relative to what your codes might be grouped into. Type in a name and hit OK.



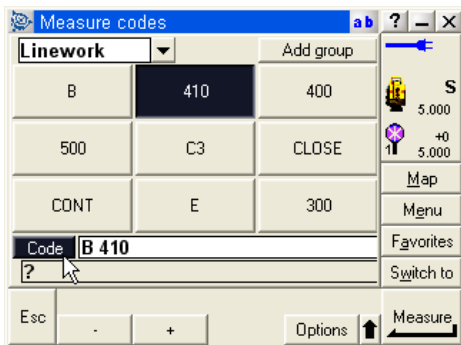
-Now tap on a blank Code Box and Hold. When you release you will be prompted for a new Code to enter here. Place the code in as you would enter it and hit OK. Repeat this procedure for each code box. You will see your group populate. If you use up all of the code boxes, just create a new code group by clicking on the Add Group box. Notice at the top left of the screen, you can switch between groups by clicking on the down arrow.



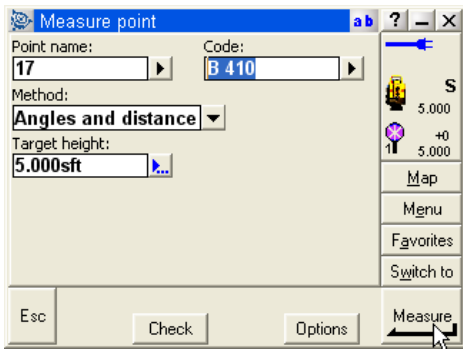
-Click on the Options softkey to change the options on how to use the Measure Codes command. You will see some settings like Auto Measure. Turn this on or off depending on if you want to be prompted for the code before the instrument of GPS Receiver is trying to measure. This is useful when adding extra information to your code (ie.. turn AutoMeasure off). You also have a String Suffix. This is used for when running multiple lines with the same code. The default suffix is 1. You can also use the Template pickup to collect in a cross section manner. Turn it on and select the number of elements in your template cross section. Measure them once in order, and the software will then prompt you for the next code in the template to be used. Hit Accept to store any changes to your Measure Code Options.



-Use the Code button to allow you to join two codes together. This is useful when you have multiple lines forming at the same point.



-To collect in Measure Codes. Tap the code of choice and the software will immediately start measuring to the point of interest. If you have AutoMeasure turned On in your Options, then the Software will record the shot and bring you back to the Measure Codes screen. If you have AutoMeasure turned Off, then you will be prompted to accept the code or add to it if you wish. After you complete the code, then you will need to Measure the Point of interest. This is the same screen as you would see when Measuring Topo.



This completes the section on basic set-up and collection with the Trimble Survey Controller software and Conventional Total Stations.