

**International Union of
Operating Engineers**

Local 49

***Topcon Pocket 3D
Field Reference Guide
2021***

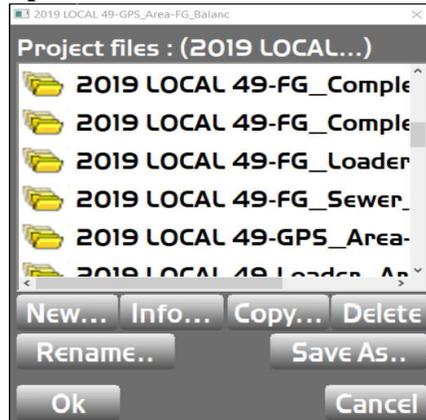
INDEX

1) Creating or Importing/Exporting a Project	Page 3
2) Initial Rover Setup (Base Station or VRS)	Page 5
3) Initial Site Localization	Page 9
4) Connecting Rover to a Preprogrammed Base Station	Page 18
5) Connecting Rover to VRS Network	Page 20
6) Import/Export Control Points to Data Collector	Page 21
7) Field Topo for Cut/Fill Volumes – Site Design	Page 24
8) Stockpile Topo & Field Volumes	Page 27
9) Staking a Point	Page 30
10) Staking a Line between 2 Points	Page 32
11) Staking a Line with/without Horizontal/Vertical Offsets	Page 33
12) Topcon File Extensions	Page 36

Creating or Importing/Exporting a Project

1. If creating a new project:

- a. Open Pocket 3D and tap “Data” → “Project” → select the current job name → this screen pops up:

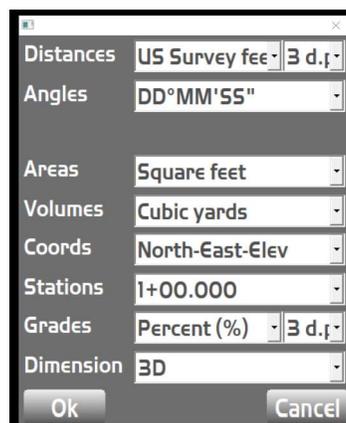


- b. Tap “New” → uncheck “Control points, Localization, MM-GPS” unless needed from current job information → name the new project the current year and project name (e.g., 2021 Local 49) → Tap “Ok” twice. Ensure the project just created is highlighted → tap “Ok” → “Yes”

- i. You would need to Import linework, surfaces, control points, etc individually into the new project

1. Linework – “Data” → “Linework” → “Import/Export”
 2. Surface – “Data” → “Surfaces” → “Import/Export”
 3. Control Points – “Data” → “Control” → “Import/Export”

- c. Check your current project units: Go to “Setup” → “Units” → Confirm the settings match below:



2. To import a .TP3 file from a jump drive
 - a. Never import a .TP3 project file into another .TP3 project file
 - b. Go to “Data” → “Project” → “Tap on current Project” → Tap “Copy” → Browse to desired TP3 file and tap “Ok” → select “Ok” make sure the copied file is blue → Tap “Ok” → Tap “Yes” to set that Project to be current

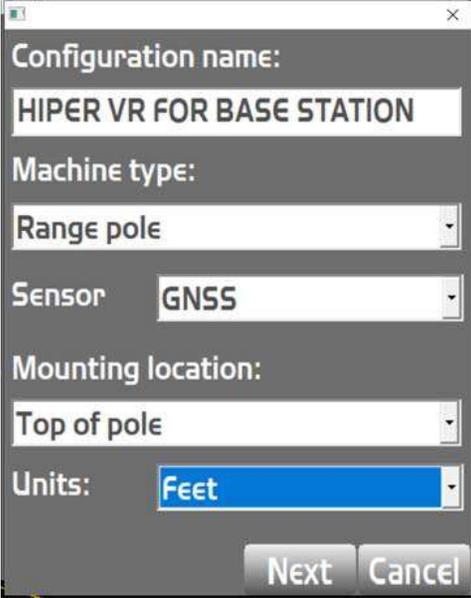
3. To export an existing .TP3 project:
 - a. Ensure that the project desired to export is open
 - b. Go to “Data” → “Project” → “Import/Export” → “to TP3 File” → select “Yes” to export the entire project → select “...” to choose where file will be exported to → “Finish”

4. To manually enter Control Points, go to “Data” → “Control” → “Control points” → select “Add” and enter the information. Select “Ok” when finished.

Initial Rover Setup (Base Station or VRS)

1. If using Rover with Base Station:

- a. Go to “Setup” → “Equipment” → If not already set up, tap “New” → Under “Configuration name”, label the GPS model name and then “for Base Station” (e.g., HIPER VR FOR BASE STATION)
- b. When settings match below, tap “Next:



Configuration name:
HIPER VR FOR BASE STATION

Machine type:
Range pole

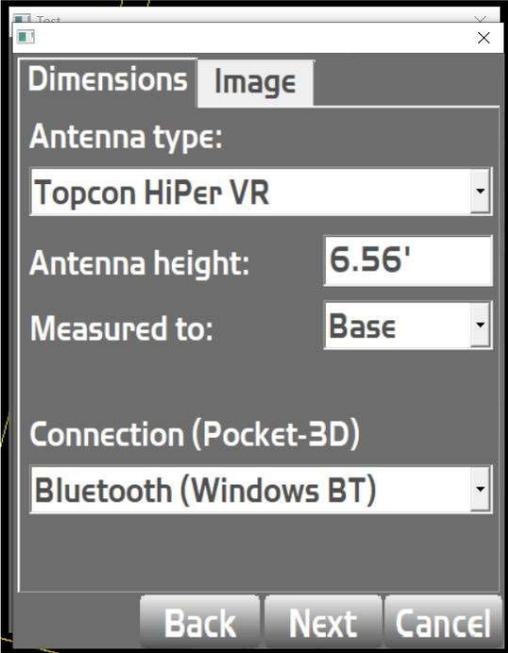
Sensor: GNSS

Mounting location:
Top of pole

Units: Feet

Next Cancel

- c. Verify antenna type (on bottom of Rover) → “Antenna height” measures “6.5620’ ” → “Measured to” is “Base” → “Connection (Pocket-3D)” is “Bluetooth”:



Dimensions Image

Antenna type:
Topcon HiPer VR

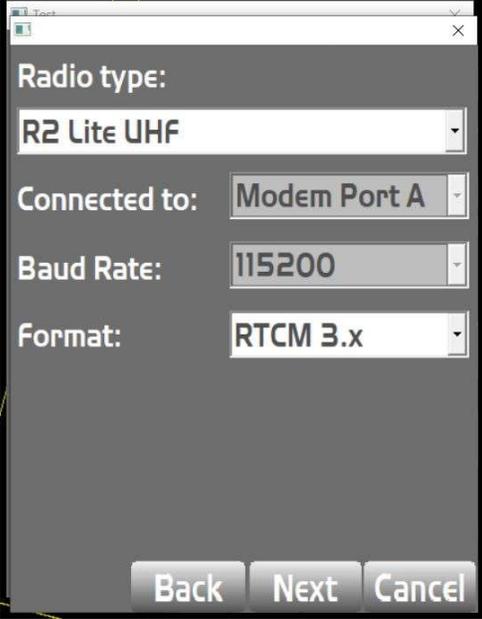
Antenna height: 6.56'

Measured to: Base

Connection (Pocket-3D)
Bluetooth (Windows BT)

Back Next Cancel

- d. Tap “Next” → Verify settings as shown below → Tap “Next” → “Finish” to save configuration file



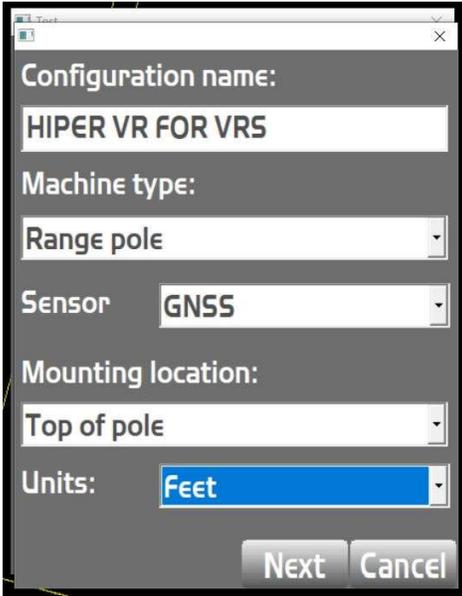
A screenshot of a configuration dialog box with a dark background and white text. The dialog has a title bar with a close button. The settings are as follows:

- Radio type: R2 Lite UHF
- Connected to: Modem Port A
- Baud Rate: 115200
- Format: RTCM 3.x

At the bottom, there are three buttons: Back, Next, and Cancel.

2. If using Rover with VRS (Virtual Reference Station):

- a. To connect to VRS, ensure you have a VRS username and password from MnCORS (it is free, but must apply for it. Will take a few days)
 - i. MnCORS application website:
<http://mncors.dot.state.mn.us/RegisterAccount.aspx>
- b. Go to “Setup” → “Equipment” → If not already set up, tap “New” → Under “Configuration name”, label the GPS model name and then “for VRS (e.g., HIPER VR FOR VRS)
- c. When settings match below, tap “Next:

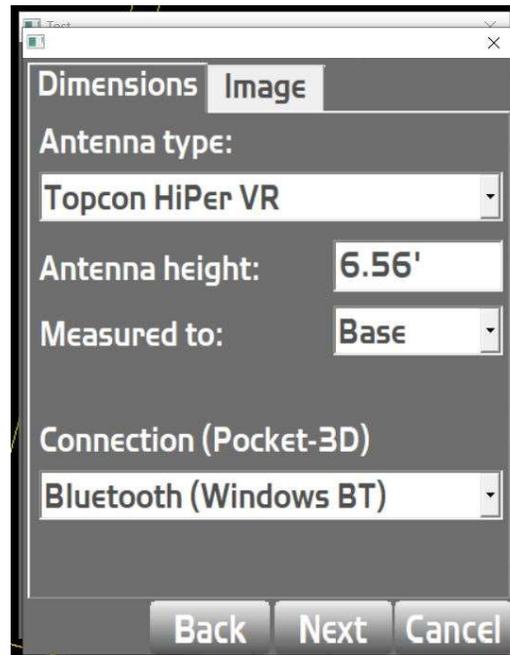


A screenshot of a configuration dialog box with a dark background and white text. The dialog has a title bar with a close button. The settings are as follows:

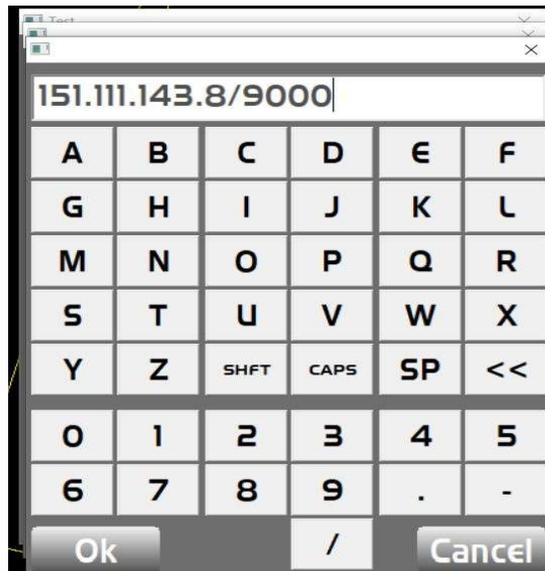
- Configuration name: HIPER VR FOR VRS
- Machine type: Range pole
- Sensor: GNSS
- Mounting location: Top of pole
- Units: Feet

At the bottom, there are two buttons: Next and Cancel.

- d. Verify antenna type (on bottom of Rover) → “Antenna height” measures “6.5620’ ” → “Measured to” is “Base” → “Connection (Pocket-3D)” is “Bluetooth”:

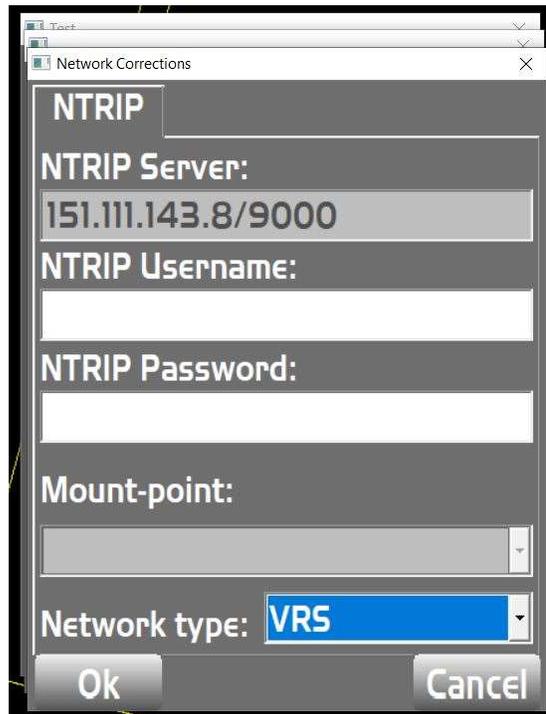


- e. Tap “Next” → Change “Radio type” to “Direct Network Connection” → Change “Base IP / port” by tapping “Set” and enter the following:
- 151.111.143.8/9000

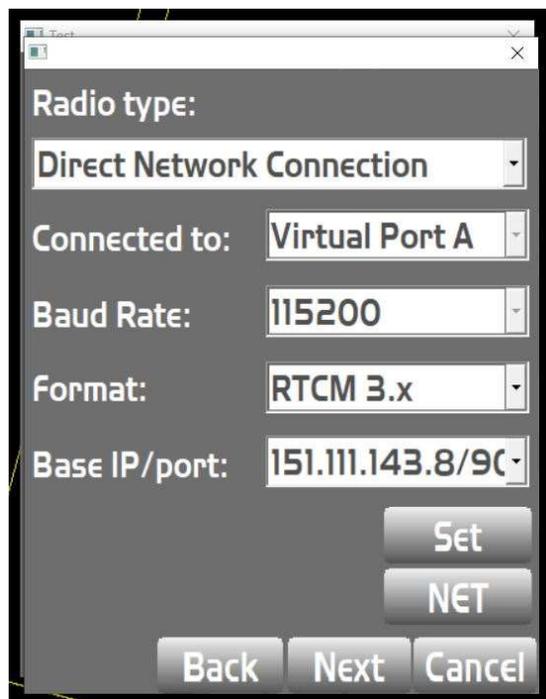


- Tap “Ok”

- f. Tap “NET” → Enter Username and password obtained from MnCORS (Username and password are case sensitive) → verify “Network type” as “VRS” → Tap “Ok”

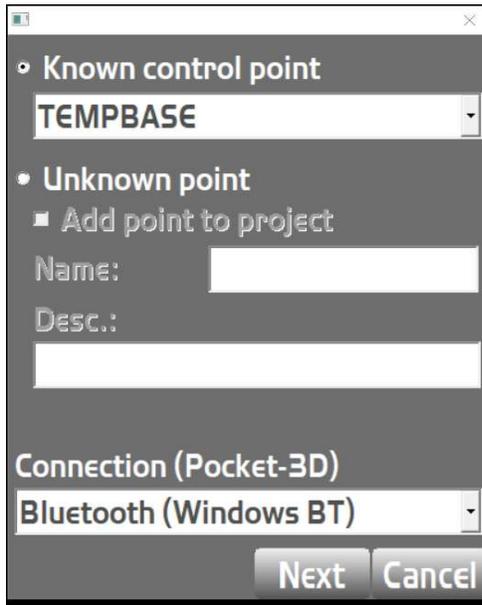


- g. Verify settings as shown below → Tap “Next” → “Finish” to save configuration file

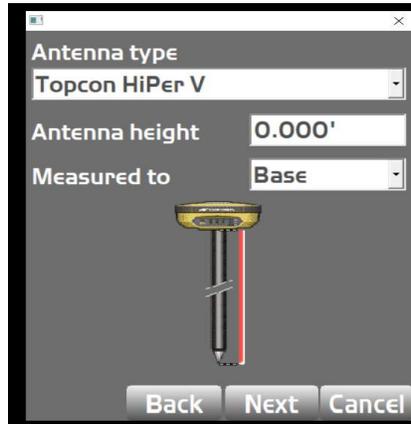


Initial Site Localization

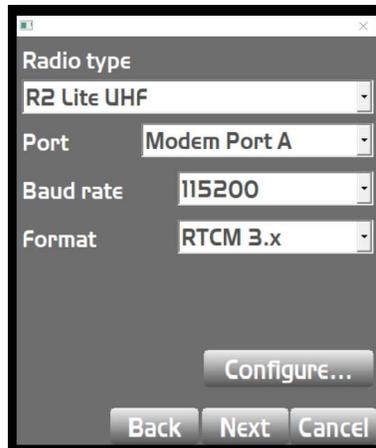
1. To get started, open Pocket 3D and open the applicable project (created under “Creating a New Project” section).
2. Go to “Data” → “Control” → “Control points” → “add”. Create a temporary control point with arbitrary coordinates (for initial site setup). Name it “TEMPBASE”. You can give a description if you want (not required). Give it the following coordinates:
 - a. North – 5000.00
 - b. East – 5000.00
 - c. Elev – 1000.00
 - d. Tap “Ok” and then tap “Ok” again.
3. Go to “Setup” → “GPS Base Station”. Ensure “Known control point” is checked and “TEMPBASE” appears below it. Ensure “Bluetooth (Windows BT)” is the current selection at the bottom of pop-up box, as shown below. Tap “Next”



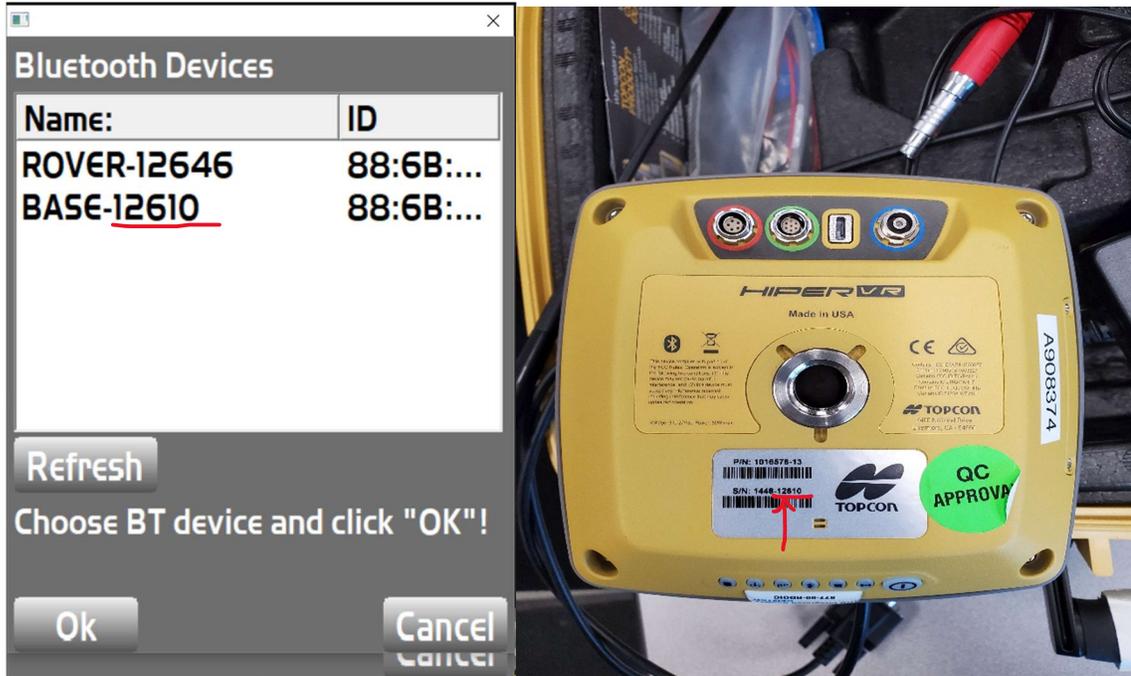
4. On the next pop-up screen, choose your proper “Antenna type” as shown on your Base Station. Change “Antenna height” to “ 0.000’ ” and “Measured to” is “Base”. Tap “Next”.



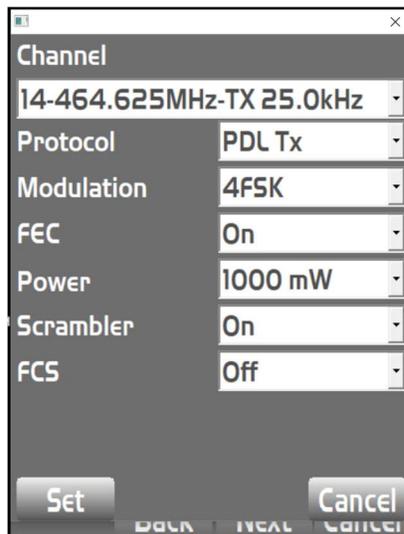
5. Ensure the settings match the attached photo below, then tap “Configure”



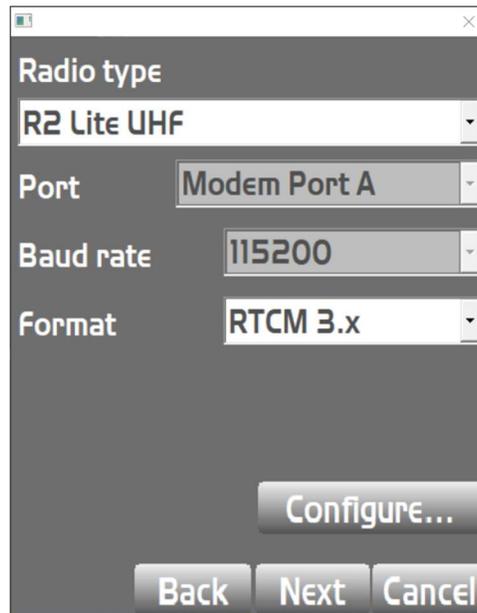
- This screen will pop up → tap “Refresh” → tap your base station (e.g., “BASE-12610”) with matching number on the bottom of it (picture of base station ID below right shown as reference), then tap “Ok”. Note: After tapping “Ok” wait ~5 seconds, as the screen from step 6 will momentarily pop up while loading. Do NOT click anything what that screen comes up again.



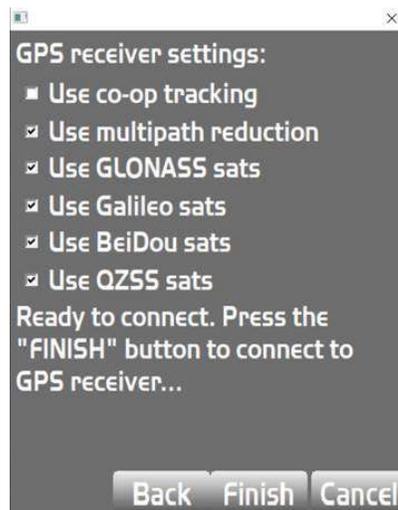
- This screen then pops up, choose whichever channel you want to use (e.g., “14-464.625MHz-TX 25.0kHz”) and before tapping “Set”, take a picture with your phone. You will need these settings to match the Rover settings. Tap “Set” after taking a legible picture.



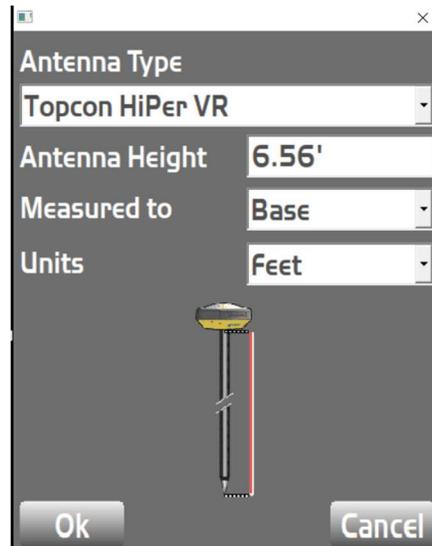
8. This screen then pops back up, confirm settings to attached phot below and tap “Next”



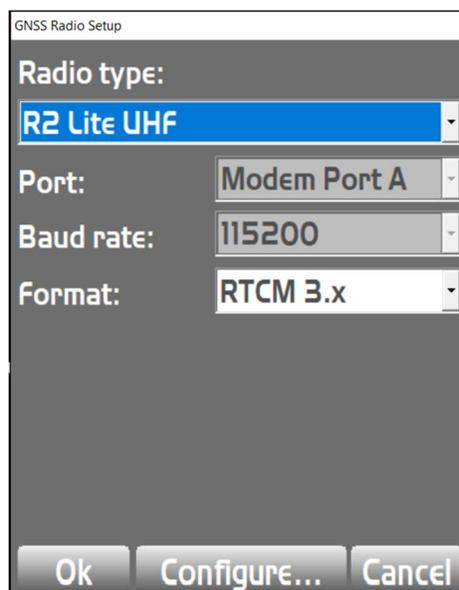
9. Ensure your settings match attached photo below and ensure you are in Bluetooth range of the Base (< ~10ft), then tap “Finish”. It should connect to the Base Station. Tap on your base station again → Tap “Ok” → Before continuing, ensure “Base Started Ok!” was displayed.



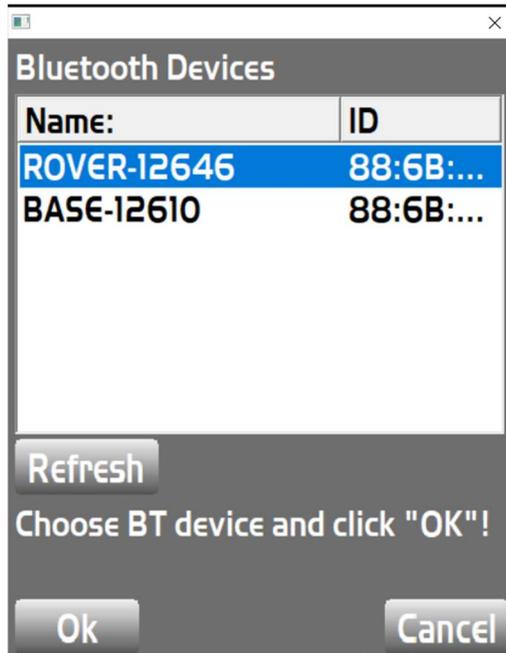
10. To connect the receiver, go to “Setup → “Antenna”, the photo below pops up:
- Confirm your “Antenna type” (e.g., Topcon HiPer VR)
 - Confirm your “Antenna Height” → 6.562’ is standard (shows 6.56’, if you tap box, it then shows 6.5620’)
 - Confirm “Measured to” → Base
 - Confirm “Unit” → Feet
 - Tap “Ok”



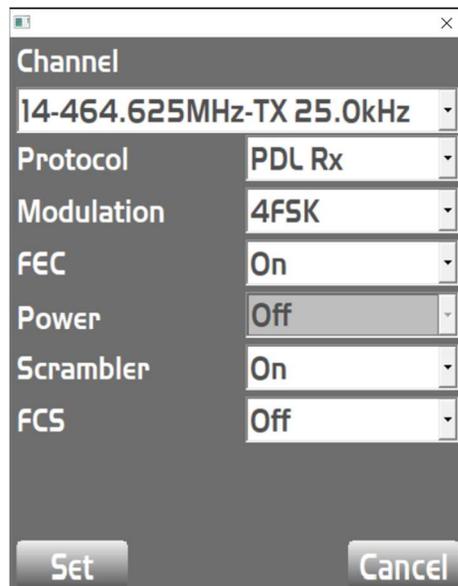
11. Go to “Setup” → “Radios” and the screen attached below pops up. Confirm settings with attached photo, then tap “Configure”



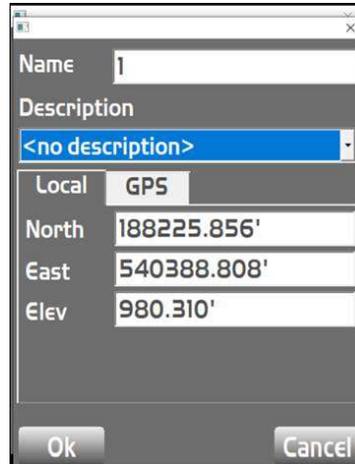
12. This screen pops up → tap your Rover (e.g., “ROVER-12646”) with matching number on the bottom of it (picture of base station ID below shown as reference), then tap “Ok”. Note: After tapping “Ok” wait ~5 seconds, as the screen from step 6 will momentarily pop up while loading. Do NOT click anything what that screen comes up again.



13. This screen pops up. Confirm the settings match the picture you took earlier of the Base set up (Step 8), tap “Set” when they are matched. Tap on your Rover again → Tap “Ok”



14. If you haven't already imported the control point file from your Surveyor, please refer to the "Import/Export Points or Control Points to Data Collector" section before proceeding. If only given a printout of the control points, enter each one manually as shown on printout (example photo below):

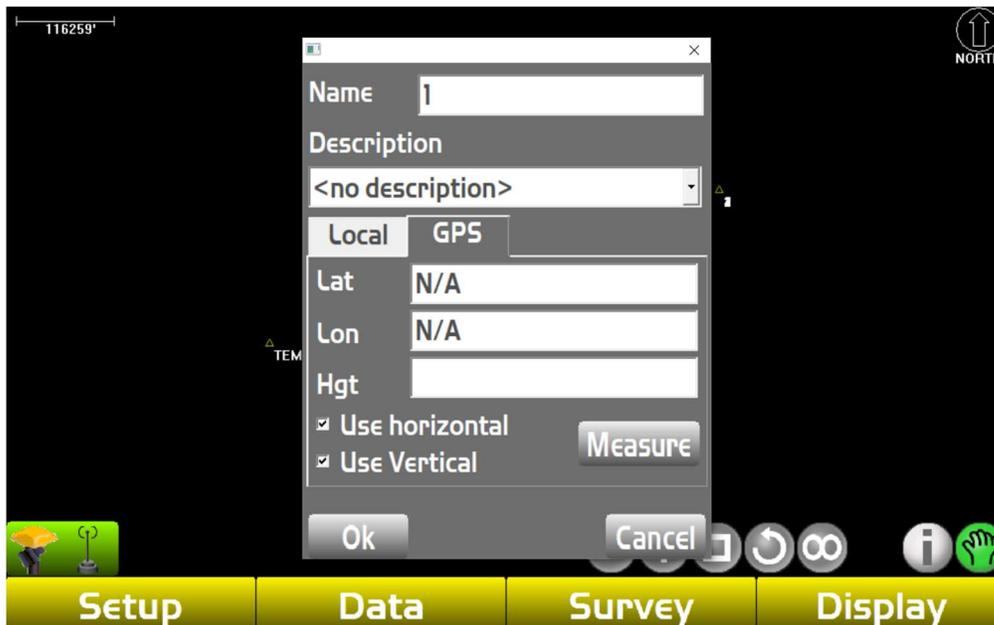


A screenshot of a data entry form for a control point. The form has a title bar with a close button. It contains the following fields and options:

- Name: 1
- Description: <no description>
- Local: GPS
- North: 188225.856'
- East: 540388.808'
- Elev: 980.310'

At the bottom, there are "Ok" and "Cancel" buttons.

15. Go to "Data" → "Control" → "Control points" → tap the nearest control point (should now be highlighted blue) → tap "Edit" → tap "GPS" tab → verify "Use horizontal" and "Use vertical" are always checked for a site calibration.



A screenshot of the control point data entry form, overlaid on a dark background. The form is titled "Control points" and has a close button. It contains the following fields and options:

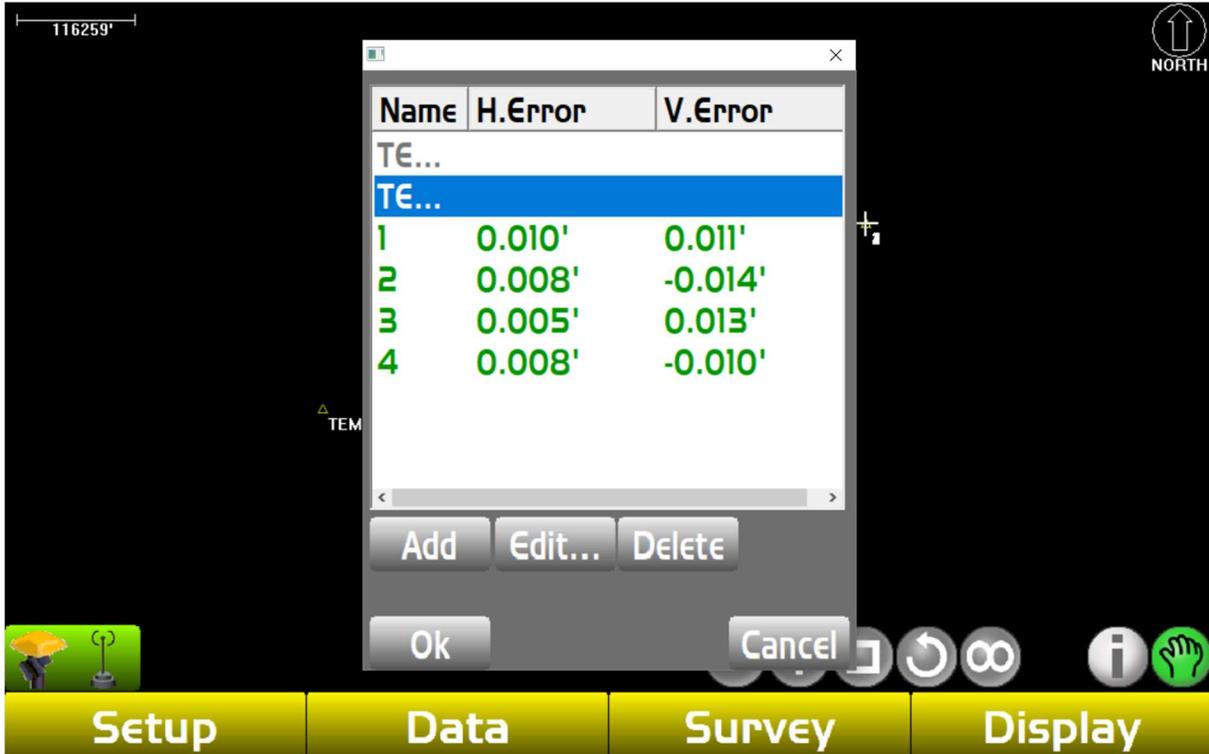
- Name: 1
- Description: <no description>
- Local: GPS
- Lat: N/A
- Lon: N/A
- Hgt: [empty field]
- Use horizontal
- Use Vertical

At the bottom, there are "Ok" and "Cancel" buttons, and a "Measure" button. The background shows a scale bar (116259'), a north arrow, and a bottom navigation bar with "Setup", "Data", "Survey", and "Display" tabs.

16. Move Rover to the top of the selected control point → level up the rod → tap "Measure" → GPS will shoot control point multiple times and store the information.

17. Tap “Ok” and repeat steps 15 and 16 for the remaining control points. Verify the completed control points turn green after they’ve been stored.

18. Once finished shooting all control points, verify all have turned green and each horizontal and vertical error are < 0.08’ (as shown below):



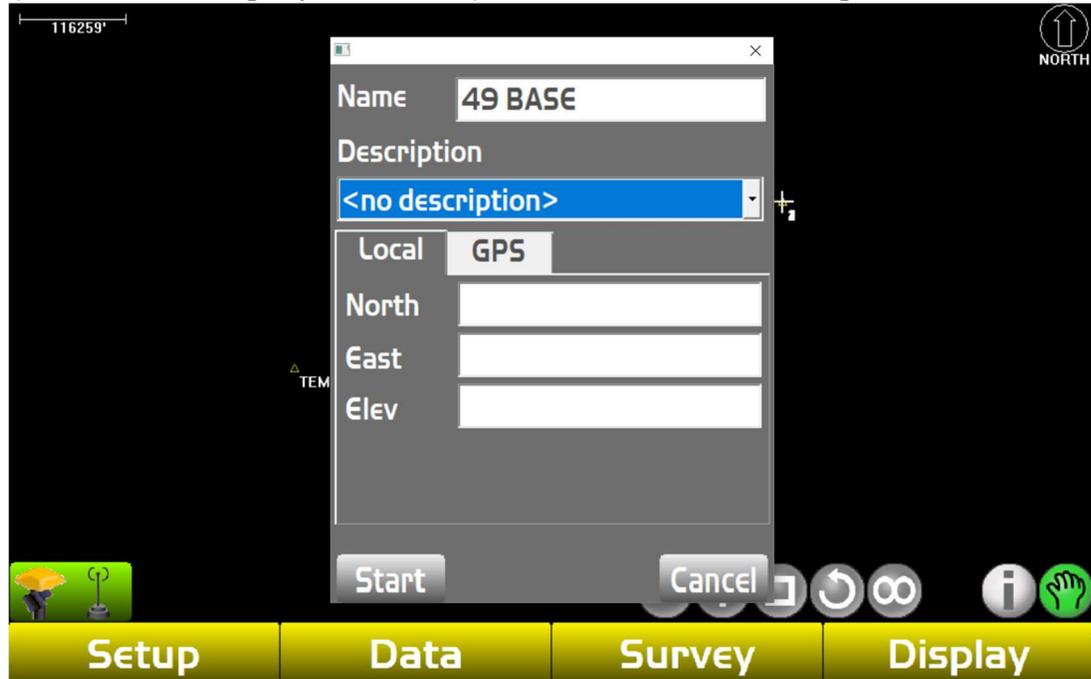
19. Tap “Ok” to continue

20. Now, set a permanent Base Station location (the first was only temporary) somewhere that is not impacted by construction and has a clear view of the sky.

21. Next, we’ll need to “burn” a new control point on the new permanent Base Station location (Note: do NOT remove Base Station GPS from its temporary location until after a control point has been stored on the new Permanent Base Station location):

- Tap “Setup” → “Antenna” → change “Antenna Height” to “ 0.00’ ” → Tap “Ok”
- Unscrew the Rover from the rod and screw it onto the new permanent Base Station location

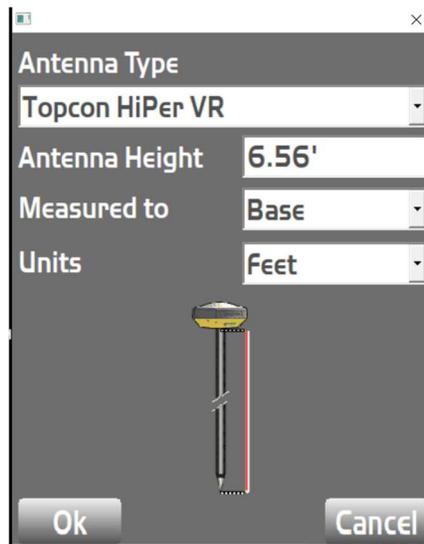
- c. Tap “Survey” → “Measure pts” → “Control pt” → name it “PERM BASE” (or whatever company standard is). “49 BASE” used in example below:



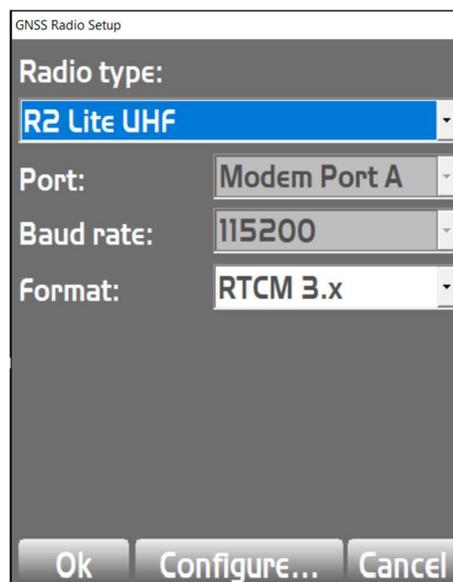
- d. Tap “Start” to now “burn” a new control point on the permanent Base Station location. Once complete, Tap “Ok”
- e. Place Rover GPS back on original rod
- f. Remove Base Station GPS from temporary base and attach to new permanent Base Station location
22. Before proceeding, tap “Survey” → “Disconnect” (disconnects Rover from TEMP BASE location)
23. Reperform steps 3 through 13 to reconnect the GPS Base Station to the new Permanent Base Station control point”
- On reperformance of step 3, ensure “PERM BASE” is selected as the control point
 - On reperformance of step 10b, confirm “Antenna height” is “6.5620’ ” since it was previously changed to “ 0.000’ ”
24. If returning to the same project the next day, no need to reperform every step:
- Turn GPS Base Station and Rover on
 - Turn data collector on and open Pocket 3D
 - Verify the proper project: tap “Data” → “Project” → verify correct file name
 - Once verified: tap “Survey” → “Connect”
 - Verify Base Station and Rover icons turn green in bottom left of screen
 - Always good practice to check into a control point every morning

Connecting Rover to a Preprogrammed Base Station

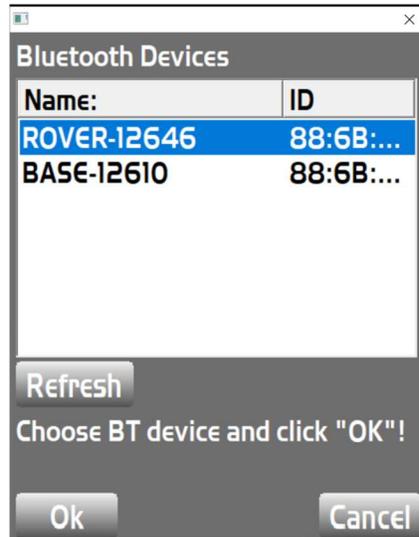
1. To connect the receiver, go to “Setup → “Antenna”, the photo below pops up:
 - a. Confirm your “Antenna type” (e.g., Topcon HiPer VR)
 - b. Confirm your “Antenna Height” → 6.562’ is standard (shows 6.56’, if you tap box, it then shows 6.5620’)
 - c. Confirm “Measured to” → Base
 - d. Confirm “Unit” → Feet
 - e. Tap “Ok”



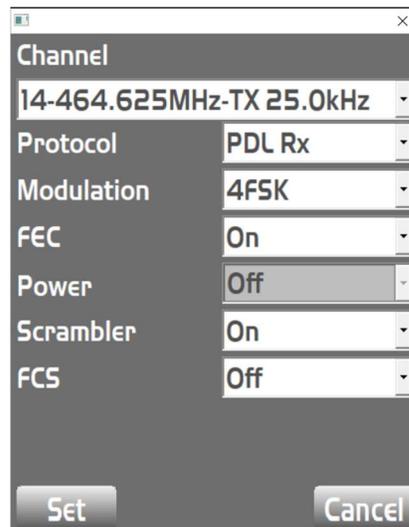
2. Go to “Setup” → “Radios” and the screen attached below pops up. Confirm settings with attached photo, then tap “Configure”



- This screen pops up → tap your Rover (e.g., “ROVER-12646”) with matching number on the bottom of it (picture of base station ID below shown as reference), then tap “Ok”. Note: After tapping “Ok” wait ~5 seconds, as the screen from step 6 will momentarily pop up while loading. Do NOT click anything what that screen comes up again.



- This screen pops up → Change “Channel” to whatever the channel that the Base Station is operating on → tap “Set” when they are matched. Tap on your Rover again → Tap “Ok”



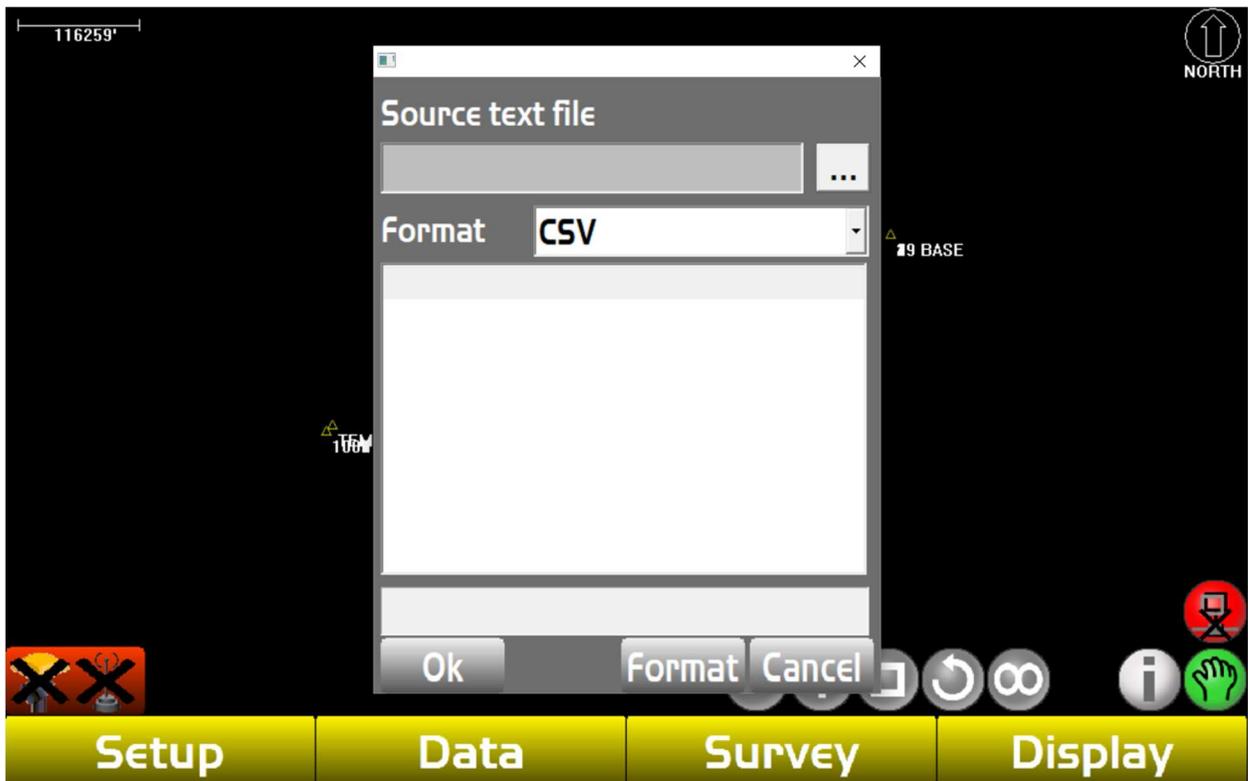
- It is recommended to check the coordinates of a control point to ensure they are within tolerance

Connecting Rover to VRS Network

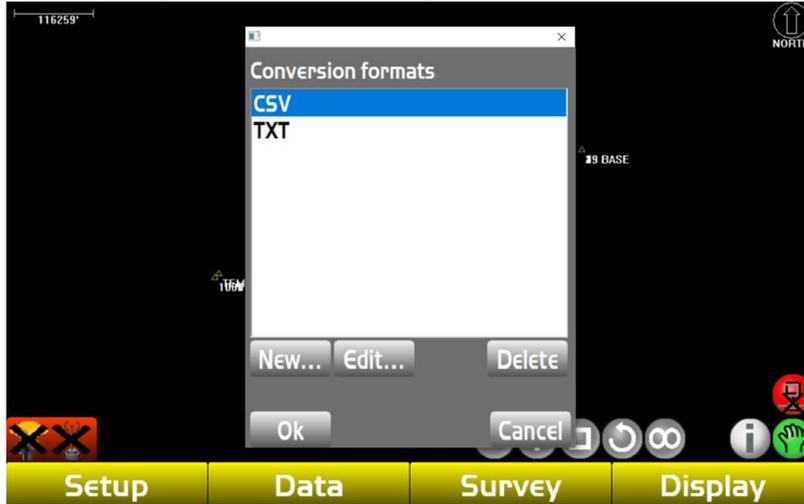
- 1. Verify Rover has been set up as stated in “Initial Rover Setup” section**
- 2. Verify Data Collector is connected to the internet via hotspot, Data Collector data plan, etc.**
- 3. Go to “Setup” → “Equipment” → highlight your VRS connection → tap “Ok” → when prompted to set VRS equipment as current equipment → tap “YES”**
- 4. Go to “Survey” → “Connect” → select the Rover → tap “Ok”**
- 5. Verify Base Station and Rover icons turn green in bottom left of screen**

Import/Export Control Points to Data Collector

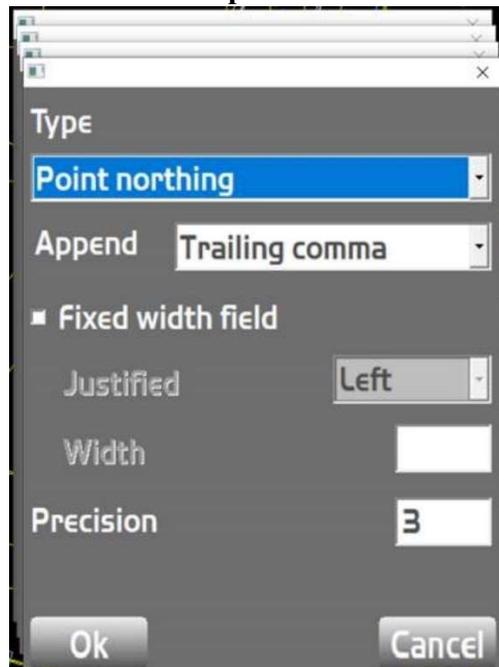
1. To Import/Export points from a .GC3 file
 - a. Go to “Data” → “Control” → “Import/Export” and choose either “From .GC3 file” for Import or “To .GC3 file” for Export. Browse to where you want to Import from or Export to
2. To Import/Export from a .TXT or .CSV file
 - a. Tap “Data” → “Control” → “Import/Export” → “Points only” → “from text file”. The following screen should pop up:



3. If conversion formats have already been created, verify the following. If conversion formats have not already been created: Tap “Format” → “New” → Name format “CSV (TXT)” → under “Extension”, name it the same as the “format name” (e.g., CSV and CSV / TXT and TXT). CSV and TXT are the most common file extensions for control points from a surveyor, so create a format for both:

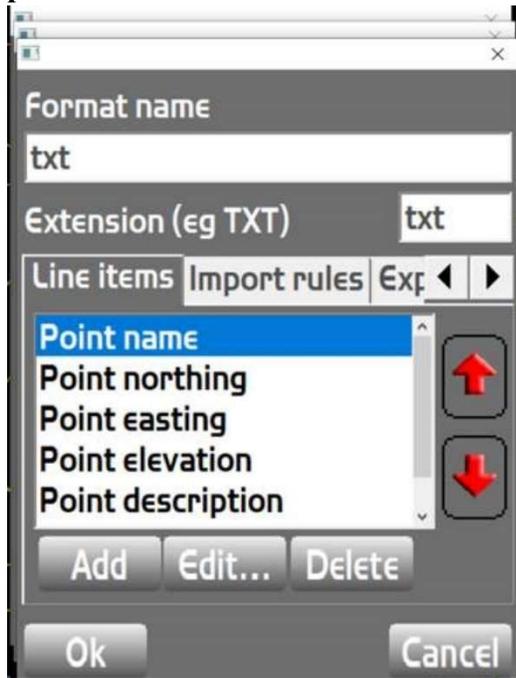


- a. Under “Line items” tab, tap “Add” to individually add each of the following in order (P, N, E, Z, D format requires it in this order). Ensure the options of each are also as pictured below:



- i. Point name (P,)
- ii. Point northing (N,)
- iii. Point easting (E,)
- iv. Point elevation (Z,)
- v. Point description (D,)

- b. Once all line items are added, verify that they are in the proper order as pictured below:



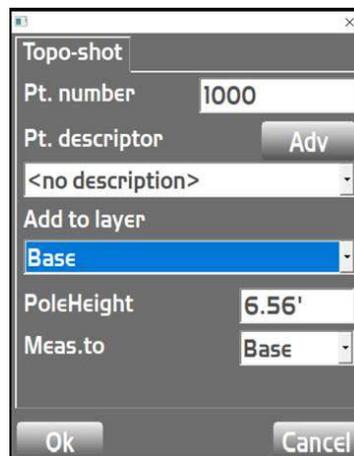
- c. Once both formats are created, verify which format your control point file is (CSV or TXT)
- d. Once verified, tap “...” under “Source text file” and browse to the “file location”
- e. Tap “Ok” it will pop up and show you the points were Imported, tap “Ok”

Field Topo for Cut/Fill Volumes – Site Design

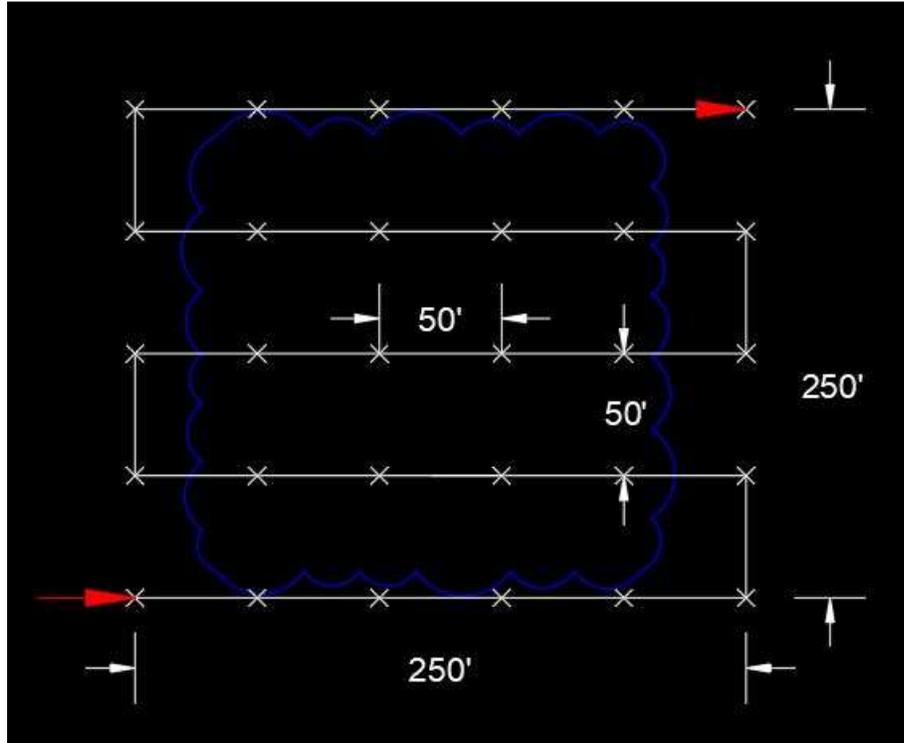
1. Before starting, ensure that you are in the correct project and connected to Base and Rover (as done in previous sections)
2. Go to “Survey” → “Measure pts” → “Options” → Verify “Prompt for details” and “Before” are both selected
3. To show visual gridlines on the data collector:
 - a. Tap “Display” → “grid lines” → check “display grid-lines” and choose desired “Grid interval”
 - b. This will give you a reference on where each minimum shot should be taken of your specified area (picture shown below)



4. To measure the field topo:
 - a. Go to “Survey” → “Measure pts” → “Topo-shot” → Change “Pt. number” to “1000” (Strongly recommended to always use unique point numbers)
 - b. Under “Add to layer”, select “<new layer>” → name it “TOPO [date]” (e.g., TOPO 20210909) → select “Show point numbers” → tap “Ok” twice
 - c. Commence topo-ing the specified area by going to your first shot → tap “Ok” the third time:



- d. Continue Topo-ing the specified area by taking shots, that encompasses the entire area (e.g. 50'x50' grid covering a 250'x250' area), with particular attention to highs and lows of the grid (shots may need to be taken in addition to your normal 50'x50' grid to accommodate highs and lows; additional shots are always better) → press the “Enter” button on the data collector for each shot → “Ok” to store each point:



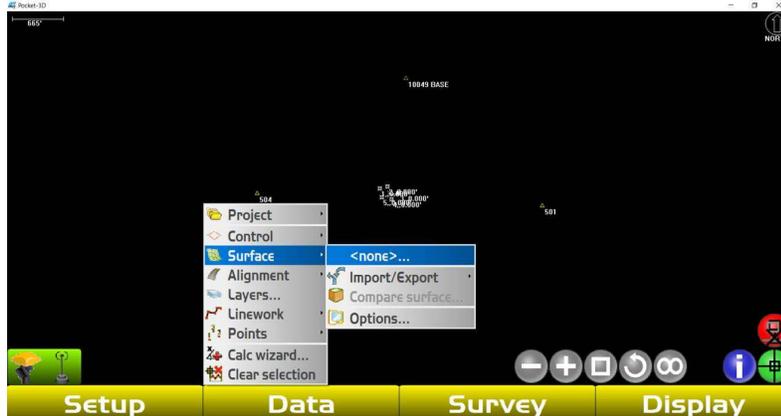
(Notice how the grid encompasses the construction limits [shown in blue])

5. Once the specified area is measured, build the topo:
- Click the “green button” in the bottom right-hand corner until the crosshair is selected:

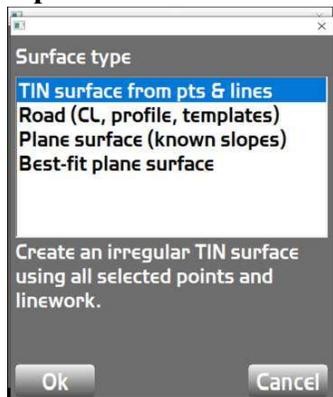


- Click and drag to create a box that encompasses all topo points

- c. Once all topo points are highlighted, tap “Data” → “Surface” → tap the upper-most option (e.g., “<none>” shown below):



- d. Tap “New” to create new surface → tap “TIN surface from pts & lines” → tap “Ok”



- e. When the next dialogue box pops up → tap “Next”
 f. Name the surface “TOPO [date]” (e.g., TOPO 20210909) → “Ok” → “Finish”
 g. When the next dialogue box pops up → tap “Cancel”

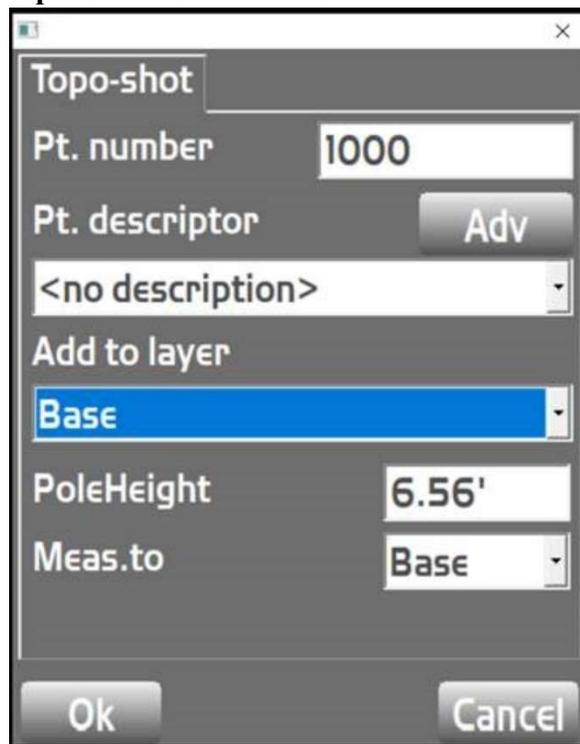
6. Tap “Data” → “Clear selection”

7. Go to “Data” → “Calc Wizard” → in the box, select “Compare two surfaces” → tap “Next”

- a. Under “Design Surface”, select the design surface that you are building to
 b. Under “Existing Surface”, select “TOPO [date]” (what was just created)
 c. Tap “Next”
 d. Tap “Report” to show the “Volume Report”
 i. Recommended to take a photo of the report to show foreman the total fill or cut volume (measured in yd³)
 ii. Note: No expansion or compaction factors are applied to the volume
 e. Tap “Cancel” → “Finish”

Stockpile Topo & Field Volumes

1. Before starting, ensure that you are in the correct project and connected to Base and Rover (as done in previous sections)
2. Go to “Survey” → “Measure pts” → “Options” → Verify “Prompt for details” and “Before” are both selected
3. To measure the base of a stockpile:
 - a. Go to “Survey” → “Measure pts” → “Topo-shot” → Change “Pt. number” to “1000” (Strongly recommended to always use unique point numbers)
 - b. Under “Add to layer”, select “<new layer>” → name it “BASE” → select “Show point numbers” → tap “Ok” twice
 - c. Commence topo-ing the base of the stockpile by going to your first shot → tap “Ok” the third time:



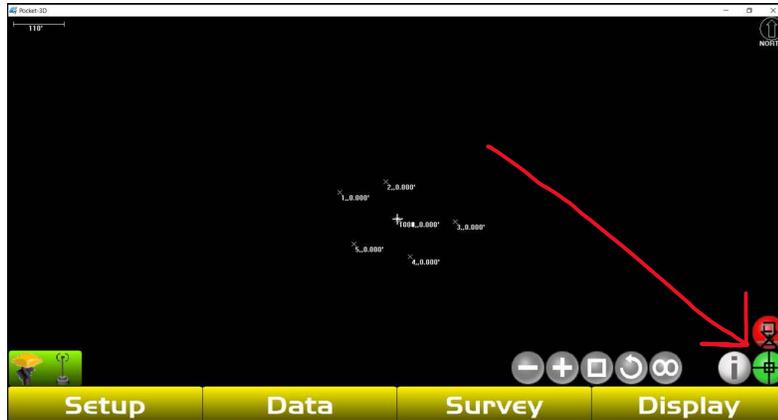
The screenshot shows a 'Topo-shot' dialog box with the following fields and values:

- Pt. number: 1000
- Pt. descriptor: <no description> (with an 'Adv' button)
- Add to layer: Base
- PoleHeight: 6.56'
- Meas.to: Base

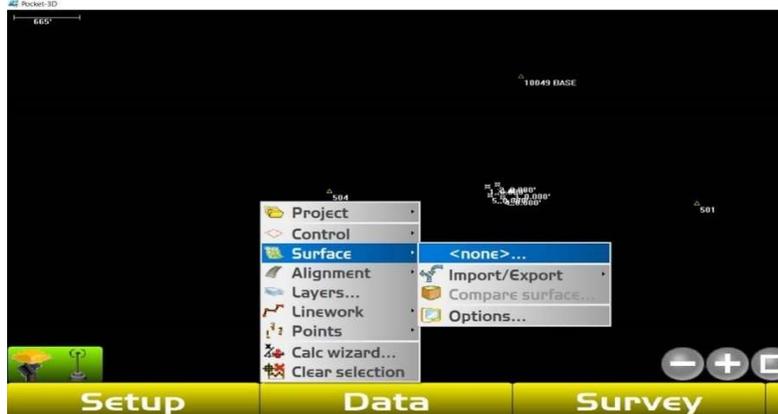
Buttons at the bottom: Ok, Cancel

- d. Continue Topo-ing the base of the pile by taking shots around the entire base by pressing the “Enter” button on the data collector for each shot → “Ok” to store each point

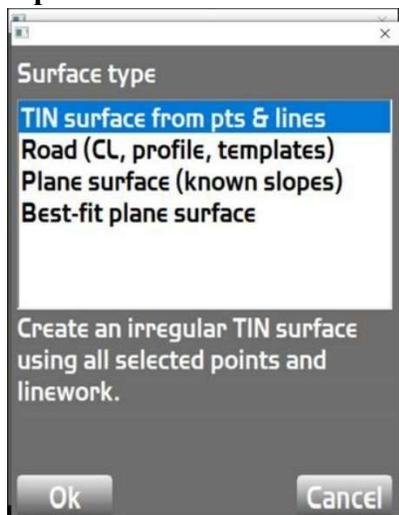
4. Once the base of the stockpile is measured, build the base surface before topo-ing the rest of the pile:
 - a. Click the “green button” in the bottom right-hand corner until the crosshair is selected:



- b. Click and drag to create a box that encompasses all base topo points
 - c. Once all topo points are highlighted, tap “Data” → “Surface” → tap the upper-most option (e.g., “<none>” shown below):



- d. Tap “New” to create new surface → tap “TIN surface from pts & lines” → tap “Ok”



- e. When the next dialogue box pops up → tap “Next”
 - f. Name the surface “Base” → “Ok” → “Finish”
 - g. When the next dialogue box pops up → tap “Cancel”
5. Before topo-ing the stockpile → tap “Data” → “Clear selection”
6. Tap “Survey” → “Measure pts” → “Topo-shot” as done previously in steps 2a-2b
- a. Name the new layer “Pile” → tap “Ok” twice
 - b. Commence topo-ing the interior of the stockpile by going to your first shot → tap “Ok” the third time
 - c. Continue taking more topo-shots by pressing enter, as in step 2c
 - d. Once topo-ing stockpile is complete, verify crosshair is still selected as in step 3a
 - e. Click and drag to create a box that encompasses all topo points (including base points)
 - f. Once all topo points are highlighted, tap “Data” → “Surface” → tap the upper-most option (as shown in step 3c)
 - g. Tap “New” to create new surface → tap “TIN surface from pts & lines” → tap “Ok” (as shown in step 3d)
 - h. When the next dialogue box pops up → tap “Next”
 - i. Name the surface “Pile” → tap “Ok” → “Finish”
 - j. When the next dialogue box pops up → tap “Cancel”
7. Go to “Data” → “Calc Wizard” → in the box, select “Compare two surfaces” → tap “Next”
- a. Under “Design Surface”, select “Pile”
 - b. Under “Existing Surface”, select “Base”
 - c. Tap “Next”
 - d. Tap “Report” to show the “Volume Report”
 - i. Recommended to take a photo of the report to show foreman the total fill or cut volume (measured in yd³)
 - ii. Note: No expansion or compaction factors are applied to the volume
 - e. Tap “Cancel” → “Finish”
 - f. Go to “Data” → “Clear Selection”

Staking a Point

1. Before starting, ensure that you are in the correct project and connected to Base and Rover (as done in previous sections)
2. Before starting, you need to know which layer the point you want to stake out is on. Go to “Data” → “Points” → “Listing” on the box that pops up, select “Layer” and change to “<all layers>”. See which layer the point you want to stake is on. Tap “Ok’ once verified.
3. To select a point:
 - a. Click the “green button” in the bottom right-hand corner until the crosshair is selected:



- b. Click and drag to create a box that encompasses desired point
 - c. Once topo point is highlighted, tap “Survey” → “Stake-out” → “Point list”
 - d. Change “Layer” to the layer where your point is stored under, verify selected point is highlighted in blue → tap “Ok”
4. Near the bottom left-hand corner:
 - a. Pt (Point) – which point is selected
 - b. dE (delta Easting) – distance required to move East (positive; 416.079’) or West (negative; -416.079’)
 - c. dN (delta Northing) – distance required to move North (positive; 263.855’) or South (negative; -263.855’)

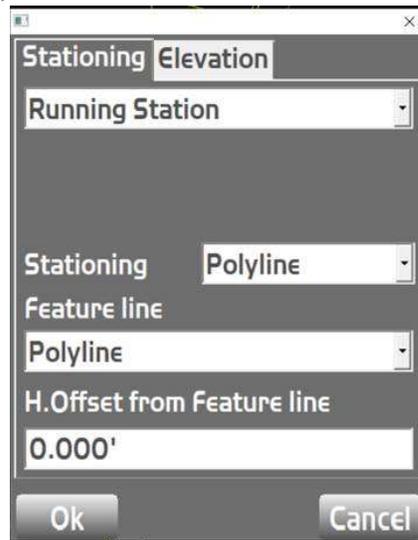
- d. Up/down arrow – Up arrow and number represent a fill; down arrow and number represent a cut



5. When finished staking out point → “Survey” → “Stake out” → “Stop stake-out”
6. Then go to “Data” → “Clear selection”

Staking a Line Between Points

1. Before starting, ensure that you are in the correct project and connected to Base and Rover (as done in previous sections)
2. Go to “Survey” → “Measure pts” → “Start Pline” → Under “Add to layer” either choose “DEFAULT” or go to “<new layer>” and name it accordingly
3. Ensure you are level and at location of desired line start → tap “Ok”
4. Walk to second location → level up rod → press “Enter” button
5. Go to “Survey” → “Measure pts” → “End polyline”
6. In bottom right-hand corner, change green icon to the crosshair → select line that was just created
7. Go to “Survey” → “Stake-out” → “Polyline” → verify “Running Station” is selected
 - a. Under “Stationing” tab, to stake actual line, leave “H.Offset from Feature line” set to “ 0.000’ ” ; to stake same line offset from actual line (e.g., 3’ offset from back of curb), enter the desired horizontal offset



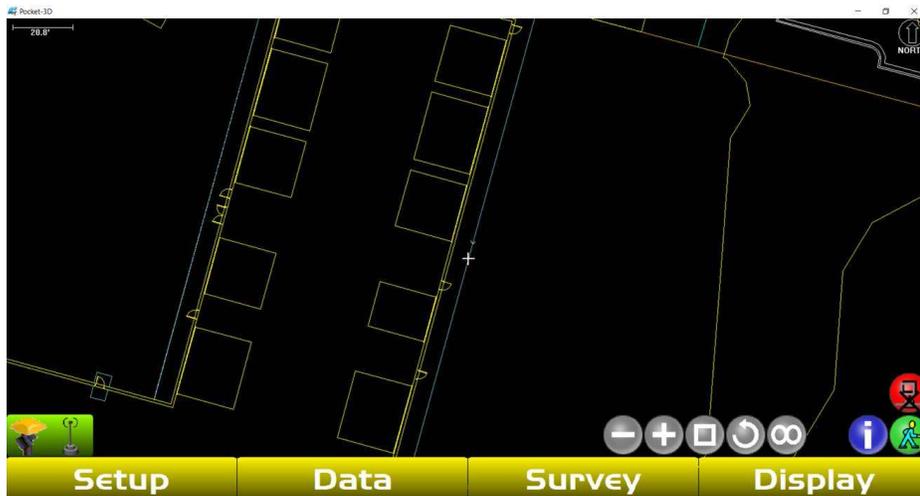
- b. Under “Elevation” tab, verify “Cut/Fill” option is set to “Polyline” (most common); to stake a vertical offset from design elevation (e.g., 6” sand cushion on top of subgrade, which was design elevation), enter the desired vertical offset
- c. Tap “Ok”
- d. When finished → “Survey” → “Stake-out” → “Stop stake-out”
- e. Then “Data” → “Clear selection”

Staking a Line with/without Horizontal/Vertical Offsets

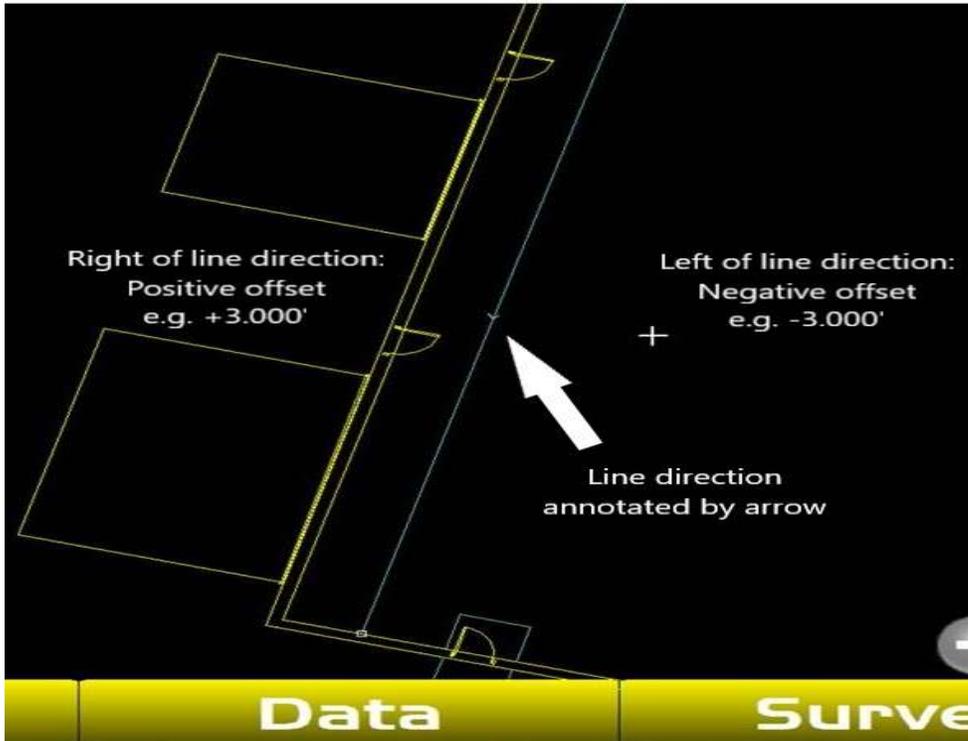
1. Before starting, ensure that you are in the correct project and connected to Base and Rover (as done in previous sections)
2. Click the “green button” in the bottom right-hand corner until the crosshair is selected:



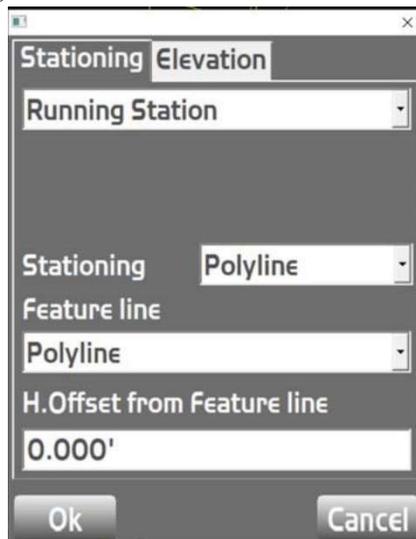
3. Select the line work that is needed to be staked:



4. To ensure the correct offset, the direction of the line that is being staked must be found. Walking the direction of the line (the way the arrow is facing), the left of the line would need to be a negative offset, the right of the line would need to be a positive offset (illustrated below)



5. Go to “Survey” → “Stake-out” → “Polyline” → verify “Running Station” is selected
- a. Under “Stationing” tab, to stake actual line, leave “H.Offset from Feature line” set to “0.000' ” ; to stake same line offset from actual line (e.g., 3' offset from back of curb), enter the desired horizontal offset



- b. Under “Elevation” tab, to stake actual design elevation, verify “Cut/Fill” option is set to “Surface” (most common); to stake a vertical offset from design elevation (e.g., 6” sand cushion on top of subgrade, which was design elevation), enter the desired vertical offset
 - c. Tap “Ok”
6. The original line is maintained. If staking a line with an offset, it will appear as a dashed line. Near the bottom left-hand corner
 - a. “Sta” (Station) – how many feet you are located away from beginning of line (0+0.000’)
 - b. Go Right/Left – which direction you need to go to stake actual line
 - c. Up/down arrow – Up arrow and number represent a fill; down arrow and number represent a cut



7. Continue staking desired line. When finished → tap “Survey” → “Stake-out” → “Stop stake-out”
8. Go to “Data” → “Clear selection”

Topcon File Extensions

.GC3 – Localization (Site Calibration – only contains localization points)

.TN3 – Triangulated Irregular Network (Created from points from a topography)

.PL3 – Plane file (Used for grading – like a laser surface; can be flat or sloped)

.RD3 – Alignment (Polyline that represents horizontal and vertical elements of a feature – has cross section data)

.LN3 – Linework (Polyline – a series of individual lines or curves that make up one continuous line; can be 2D or 3D)

.PT3 – Points file (Contains all individual points data for the project)

.TP3 – Can contain all individual file types listed above (Localization, line work, control, surface, etc.)

.MX3 – Machine builder file for 1 GPS system for multiple machines