CoordyNavi

QUICK START GUIDE

Version1.1.0

1. Overview

1.1 Use Cases

CoordyNavi is a mobile app for layout (stake-out) work using a Total Station and Auto Level.
It makes site work faster, easier, and more accurate with the minimized education cost.

1.2 System Requirements

Total Station requires a Bluetooth enabled model.
Manual Total station GM/iM-60 series, GM/iM-100 series with Bluetooth option.

Auto Level spec is any grade applicable due to manual loading the data.

Minimum Smartphone Spec requirements

CPU	Octa-core 2.0GHz or higher
RAM	4GB or more
Display	720 x 1,600 or higher
OS	Android 12 or later

1.3 Basic steps

Download App→Sign up→Sign in→License Activation→Make Coordinate data→Create “Site”→Assign Operator/Rodman→Upload site design data→Connect the equipment→Ready to use

2. Download App

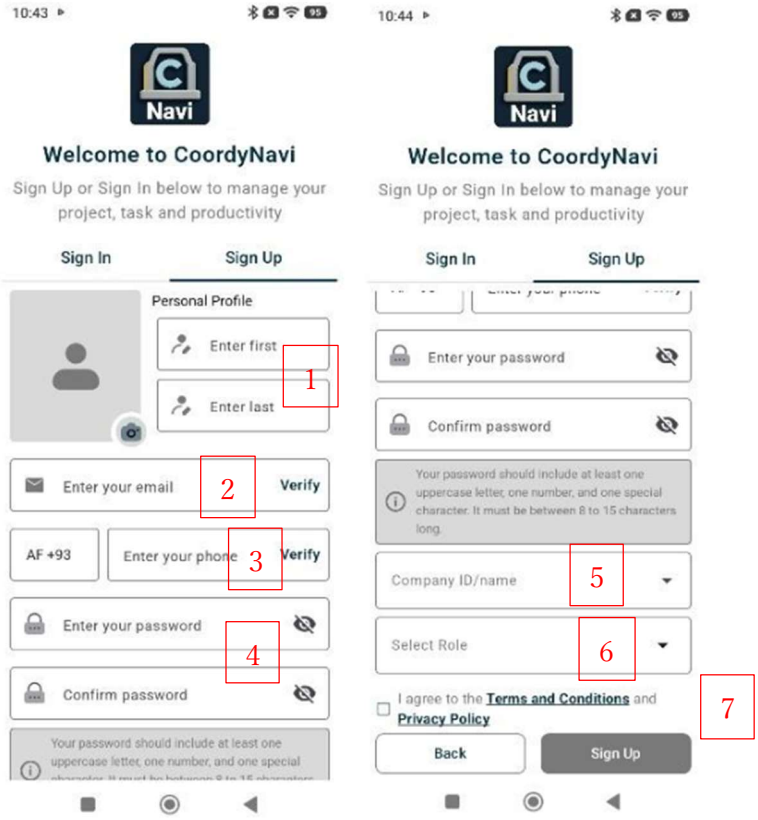
2.1 Download

Scan the QR code or visit the URL below to download the app.

https://play.google.com/store/apps/details?id=com.topcon.coordynavi

3. Sign up/Sign in

3.1 Sign up



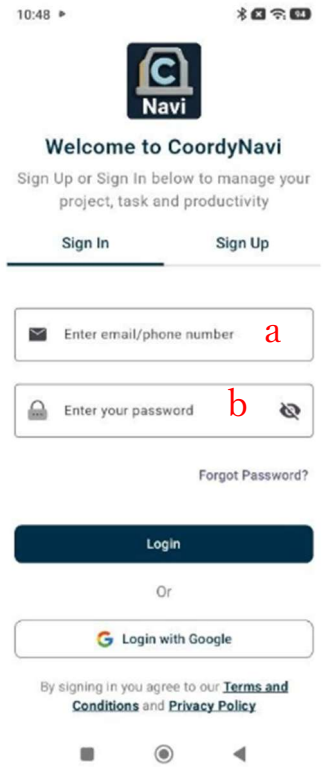
Corresponding to above numbering

1. Enter your first name and last name
2. Enter your email address, then put [Verify] key
3. Enter your phone number from internation country code. Please put [Verify] key after entered.
4. Please decide your preferred Password at two times(Same).
   Password must include **uppercase, lowercase, symbol**, and be **Min 8 characters**.
5. Type your company name.
6. Please select Instrument Operator (usually Owner of the Total station) or Rodman.
7. Check mark on acceptance of Terms and conditions.
8. Press [Sign up] Key.

3.2 Sign in

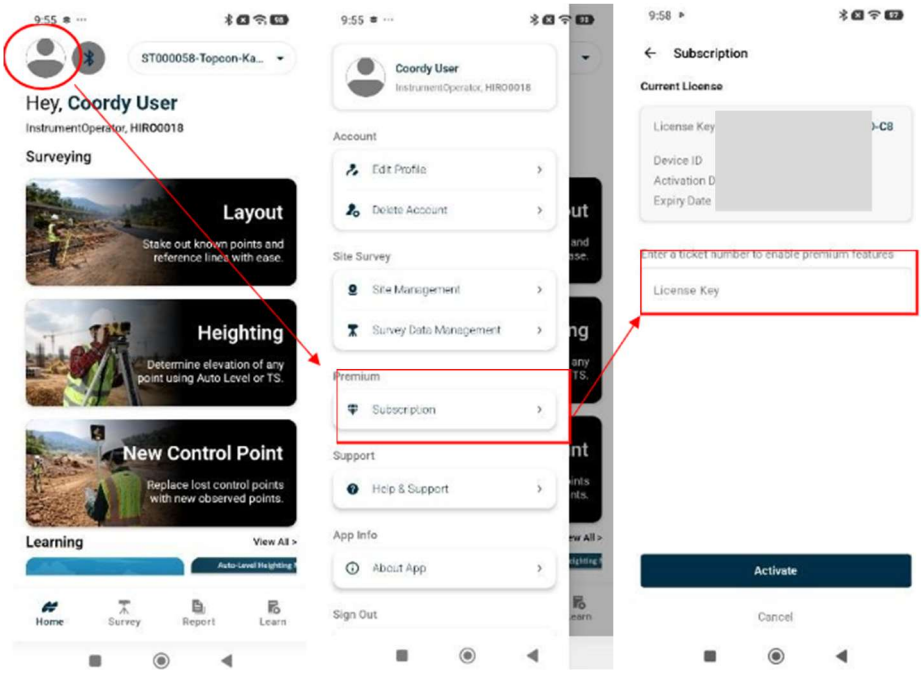
⚠ [Sign in] process is necessary after Sign up.

Please fill in a).email address(or phone number) and b). password as registered in Sign up 3.1. Then, Press [Login] key.


10:48
Navi
Welcome to CoordyNavi
Sign Up or Sign In below to manage your project, task and productivity
Sign In
Sign Up
Enter email/phone number
a
Enter your password
b
Forgot Password?
Login
Or
Login with Google
By signing in you agree to our Terms and Conditions and Privacy Policy

4. Activate License

⚠ Please assign a valid App License key to the downloaded app. Otherwise, some features such as Bluetooth connection to your device will be restricted.
If you don't have a license, please contact regional Dealer.



5. Preparation of Coordinate Data

5.1 File Format

This app supports CSV files for importing design points.

5.2 How to Create Data

Prepare coordinate data for instrument points and stake-out points as shown below.

Point ID	Easting	Northing	Elevation	Type	Remarks
CP0	123456.8	9876543.01	0.123	CP	
SP0	221196.9	1929062.36	0.4	SP	

1. Use the following headers in this order:
   Point ID, Easting, Northing, Elevation, Type, Remarks.
2. Point IDs must start with "CP" or "SP" (in capital letters), followed by one or more numerical digits.

3. Design Easting, Northing, and Elevation values can be decimals.
4. The value must exactly match either “CP” or “SP” (no variations allowed).

5.3 Coordinate System

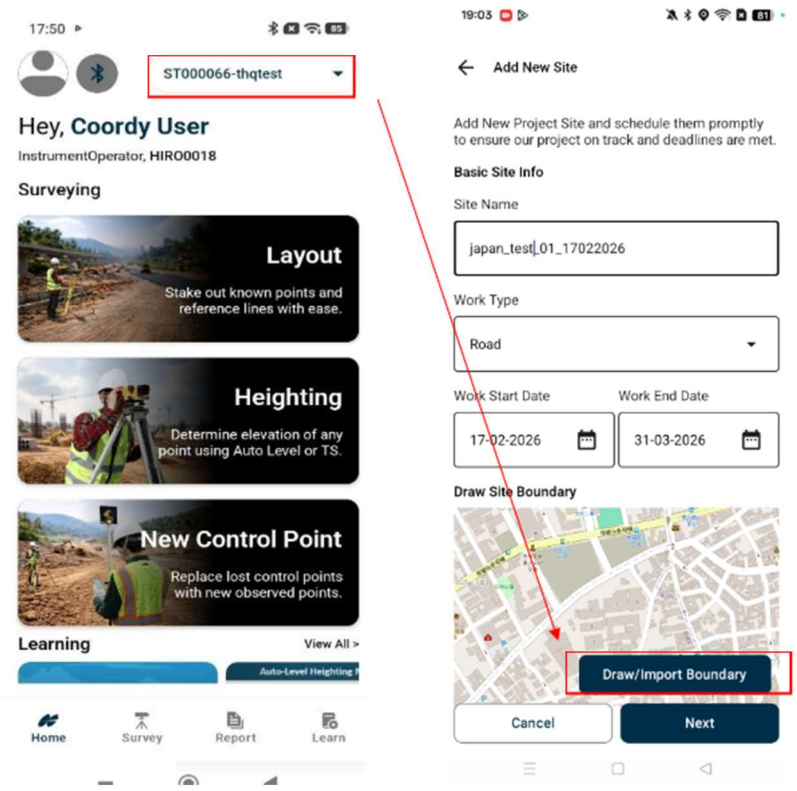
The Easting and Northing values must be provided in the UTM coordinate system.

*Universal Transverse Mercator : A meter based coordinate system for surveying & construction.

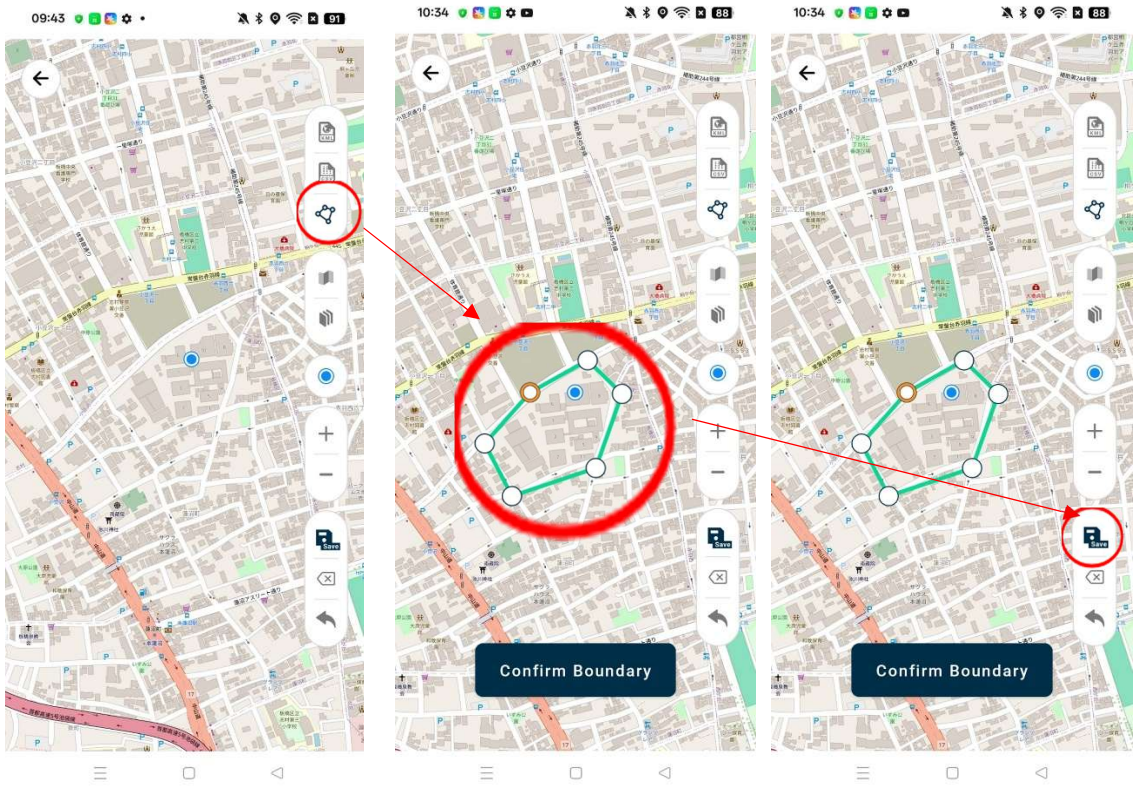
6. Add new Site

Before starting your work, create a new site using “Add New Site.”

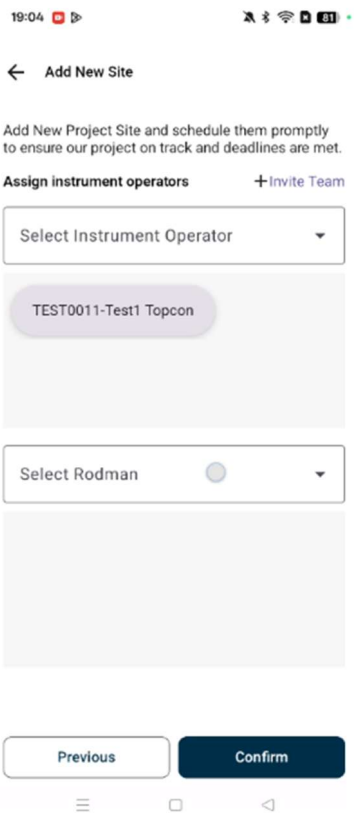
Follow the steps below.



1. Tap the area highlighted in red to start “Add New Site.”
2. Enter the Site Name, Work Type, and Duration, then tap “Draw/Import Boundary.”


Confirm Boundary
Confirm Boundary


Confirm Boundary


Add New Site
Add New Project Site and schedule them promptly to ensure our project on track and deadlines are met.
Assign instrument operators
+Invite Team
Select Instrument Operator
TEST0011-Test1 Topcon
Select Rodman
Previous
Confirm

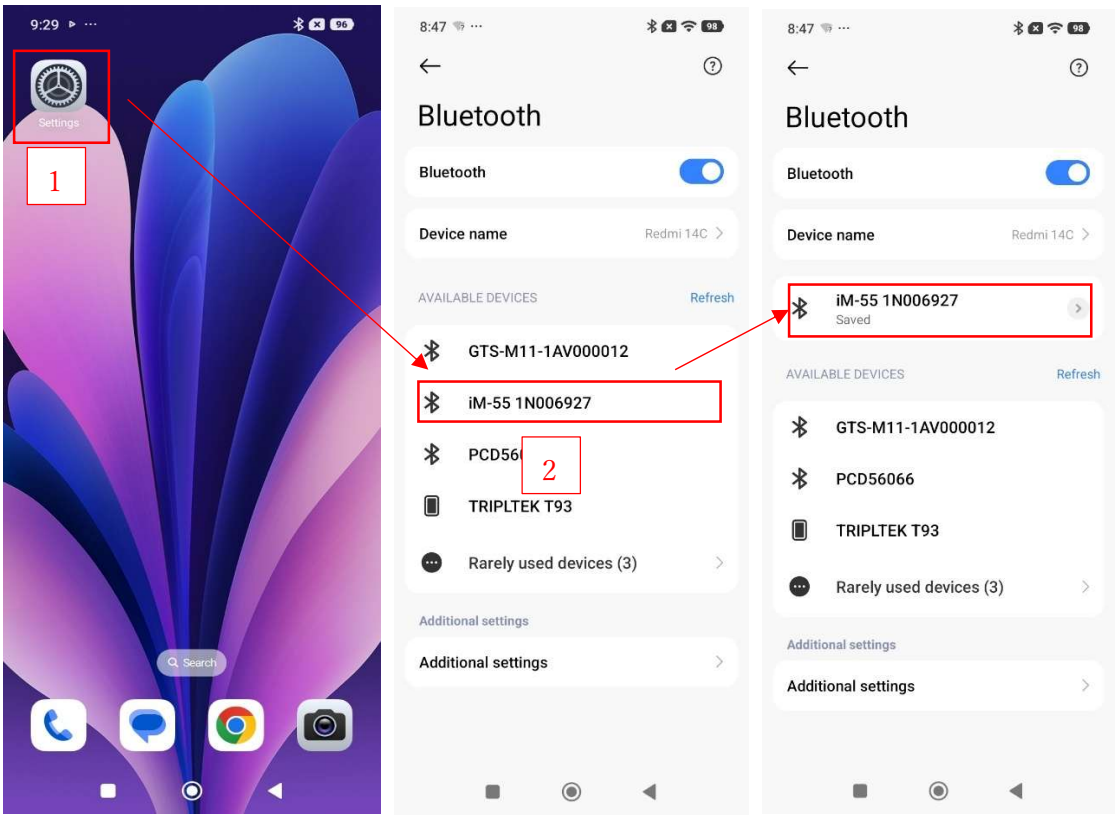
3. Tap the icon highlighted in red, then tap on the map to draw the boundary (Green line).
4. After drawing the boundary, tap the Save icon to save it, then tap “Confirm Boundary.”
5. Finally, assign the Instrument Operators (IO) and Rodman (RD) to create the job site. However, the job site can still be created even if the RD assignment is skipped.
   **Please note that reports cannot be generated unless RD information is assigned, so be sure to set the RD before exporting reports.*

7. Before Connect Total station

Please check the following settings on the Total Station:

- Is Bluetooth (BT) turned ON?
- Is Prism Mode turned ON? (if a Rodman is present)
- Is the prism constant set correctly?

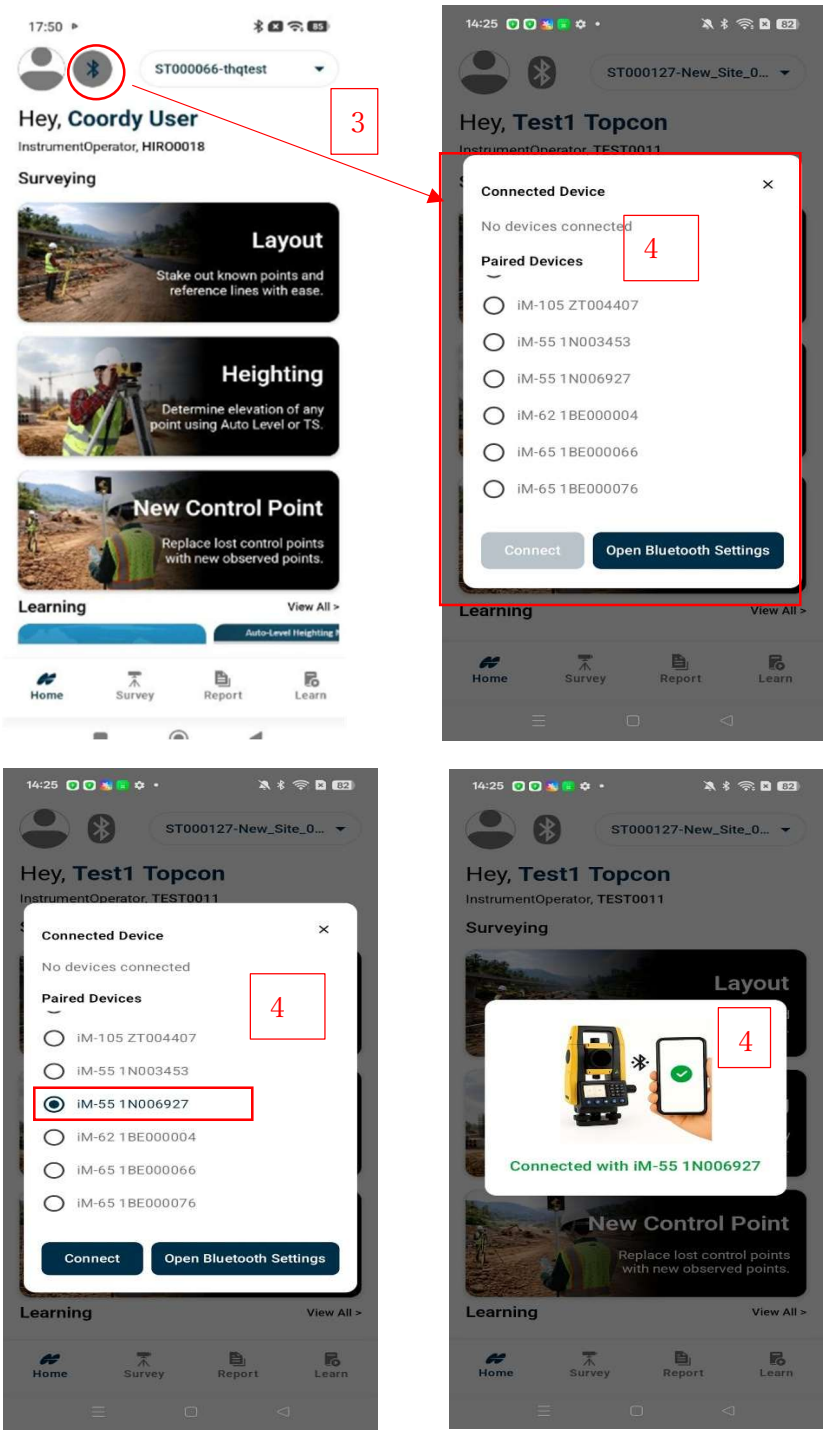
8. Connect to Total station (App)



1. Open the Bluetooth settings from your device settings and pair with the Total Station you want to connect to.
   If pairing is already completed, proceed to Step 2.
2. Select your Total Station and complete pairing.

Note1: The screens shown here are examples. Actual screens may vary depending on the device model and OS version.

Note2: The Total Station name usually appears as the model's name and serial number.

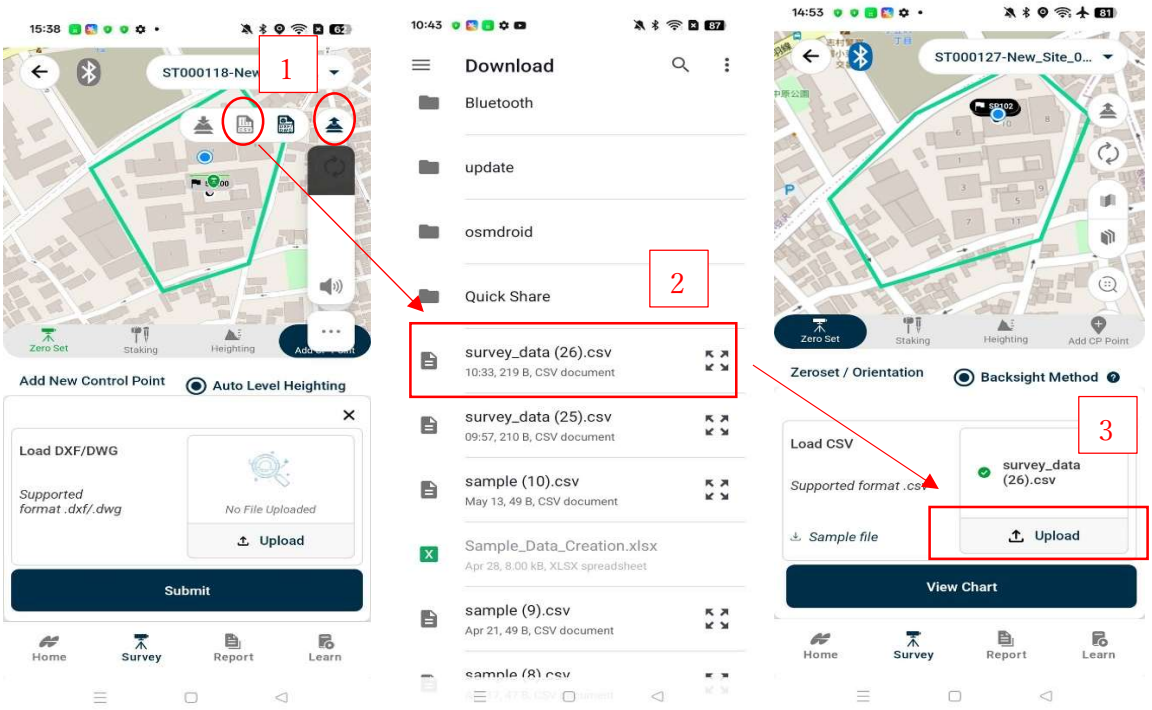


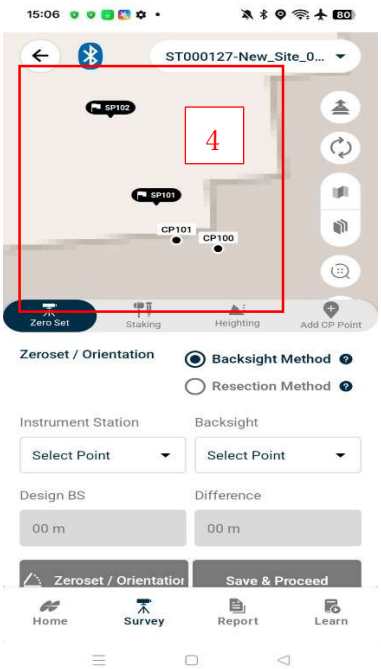
3. Tap the Bluetooth icon at the top of the app.
4. A pop-up will appear. Select the serial number of the Total Station you want to connect to, then tap “Connect.”
   If the desired Total Station is not listed, complete Step 1 first.

9. Data Input

9-1:Data Input (3D Coordinate)

1. Tap the “CSV” icon to import 3D coordinate file for the site.
2. Select the CSV file saved on the smartphone.
3. Tap “Upload” to load the selected file.
4. All imported points are displayed on the screen with CP/SP names.





9- 2 :Data Input (Design Data)

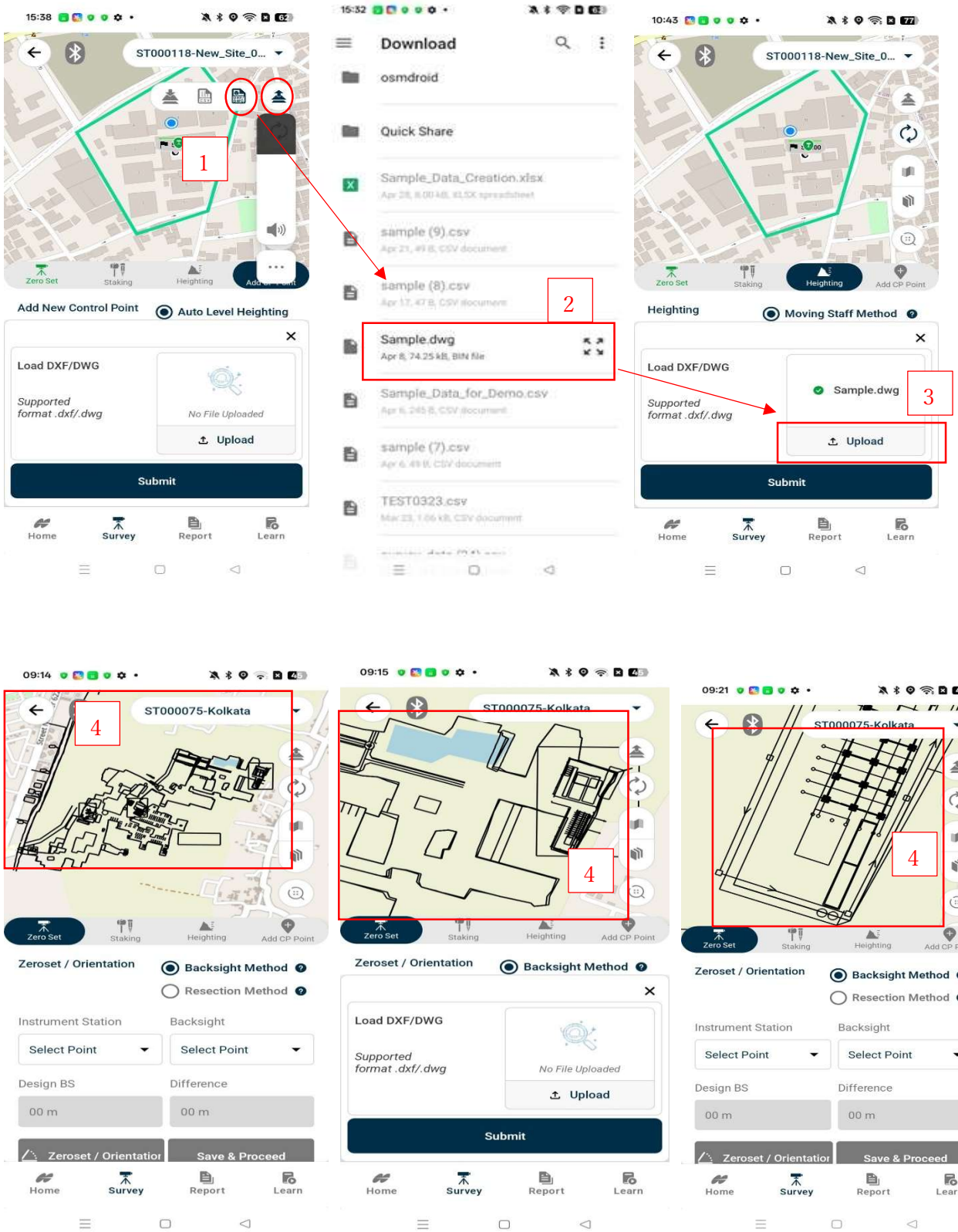
1.Tap the “DXF/DWG” icon to import a Design file for the site.

2.Select the dwg file saved on the smartphone.

3.Tap “Upload” to load the selected file.

4. Imported design lines are displayed on the screen.

A design data file size of 10 MB or less is recommended for import.



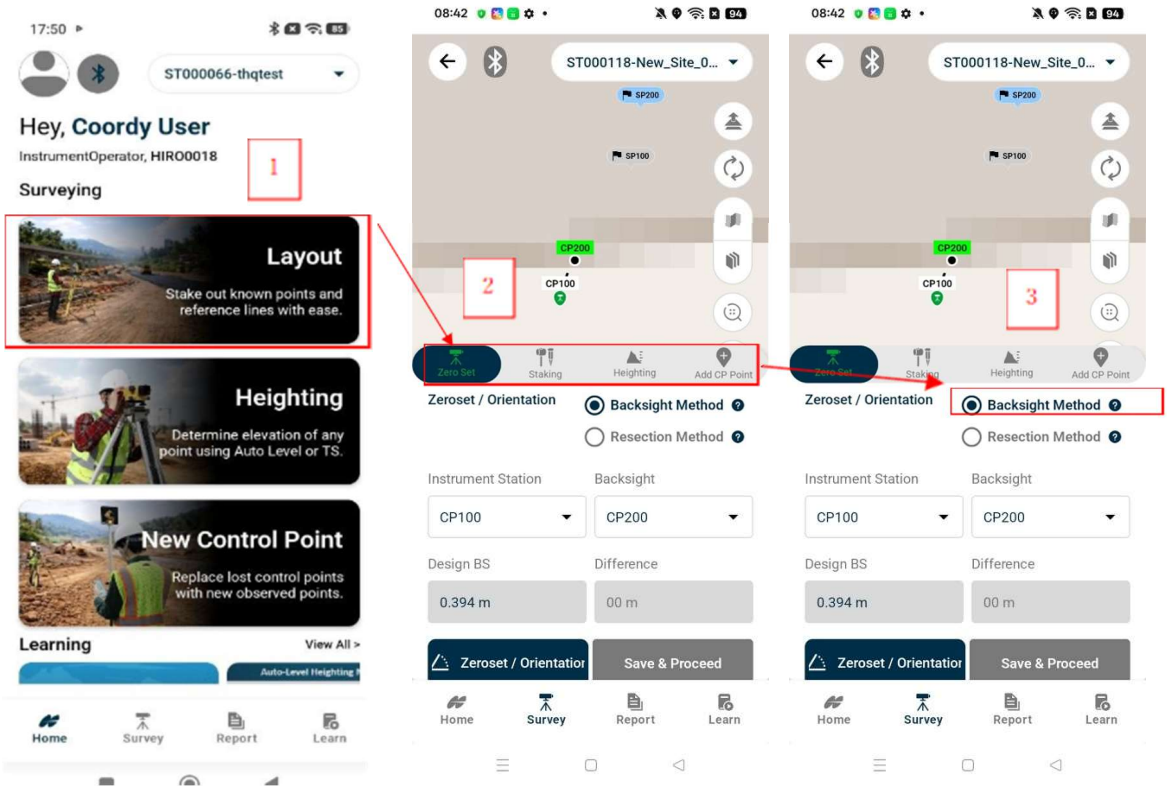
10. Layout

For layout work, two instrument setup methods are available depending on site conditions.
IS-01: Known Point Backsight Method
IS-02: Resection Method
Each setup method is explained in detail below.

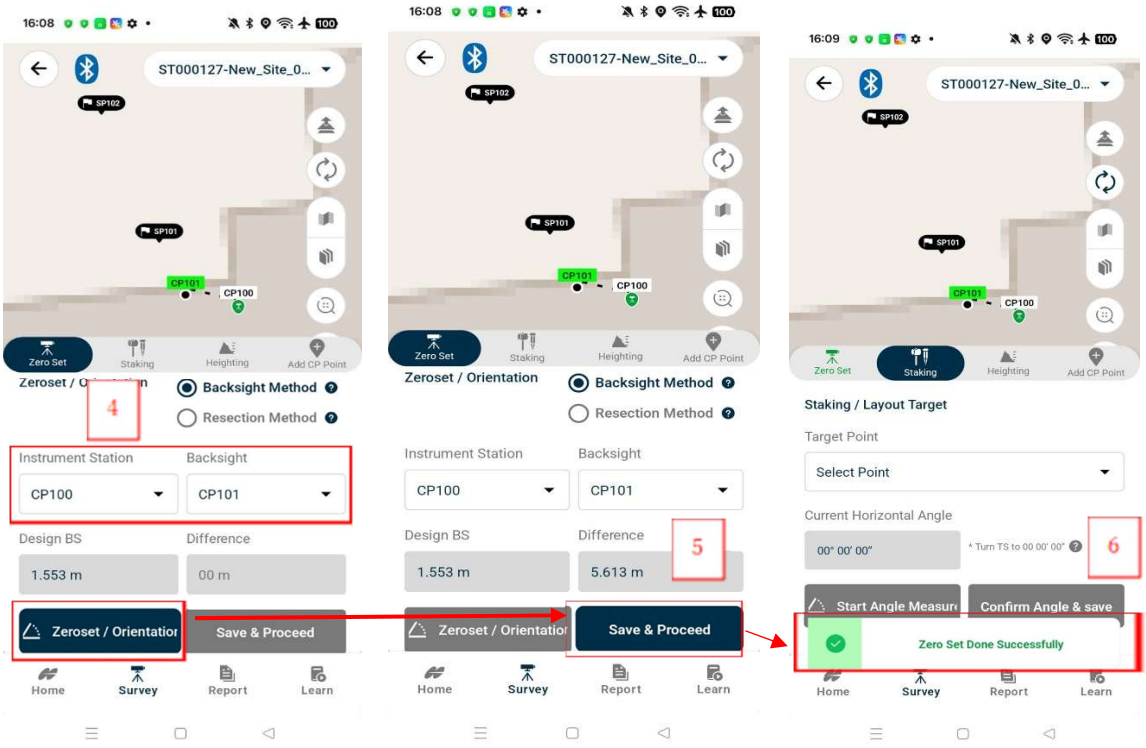
Two height measurement methods are also available for layout work.
HS-01: Moving Staff Method
HS-02: Stake and Scale Method
Each height measurement method is explained in detail below.

IS-01: Known Point Backsight Method

1. You can start the Layout operation from “Layout.”
2. The Layout function is selected from the 4 icons below.
   Zero Set/Orientation, Staking, Heighting and Add New CP.
   You can select 2 setting method, “Backsight Method” and “Resection Method”.
3. You select “Backsight Method” first, perform Zero Set/Orientation.
   Select the Instrument Station and Backsight from the dropdown menus, then sight the prism using the Total Station.

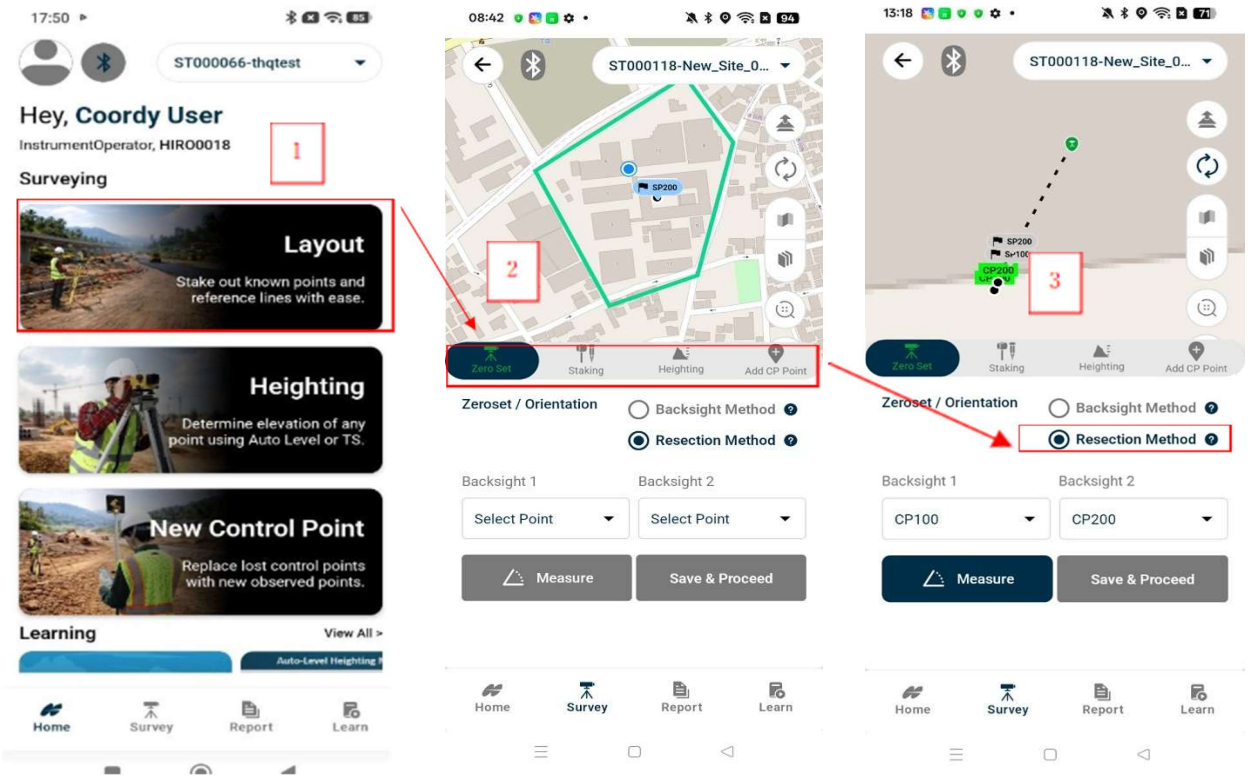


4. Select the instrument point and backsight point from CP.
   Sight the backsight point and tap “Zeroset / Orientation”.
5. The app sends the 0 Set command to the TS, and the horizontal angle is set to 0°00'00".
   Tap “Save & Proceed”.
6. When the “0 Set Successful” message appears, the setup is complete.

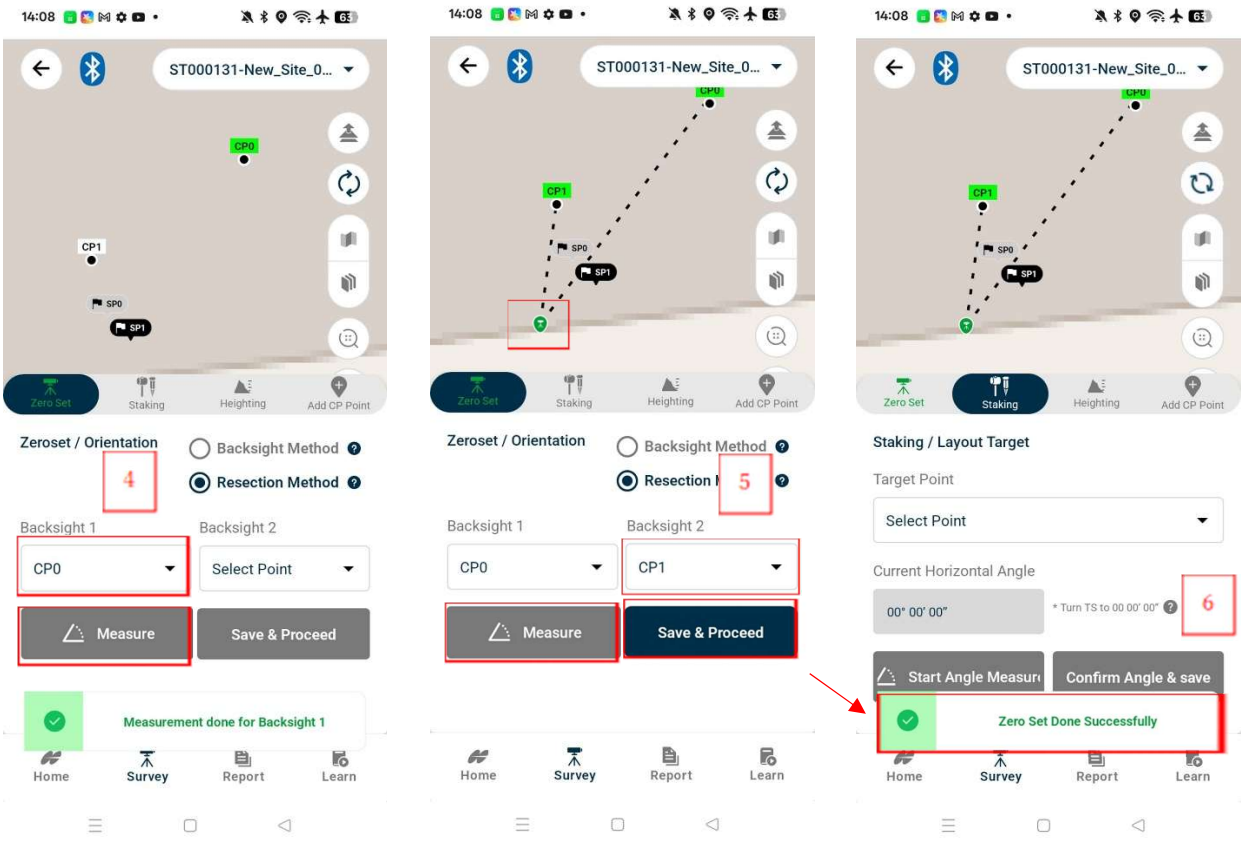


IS-02: Resection Method

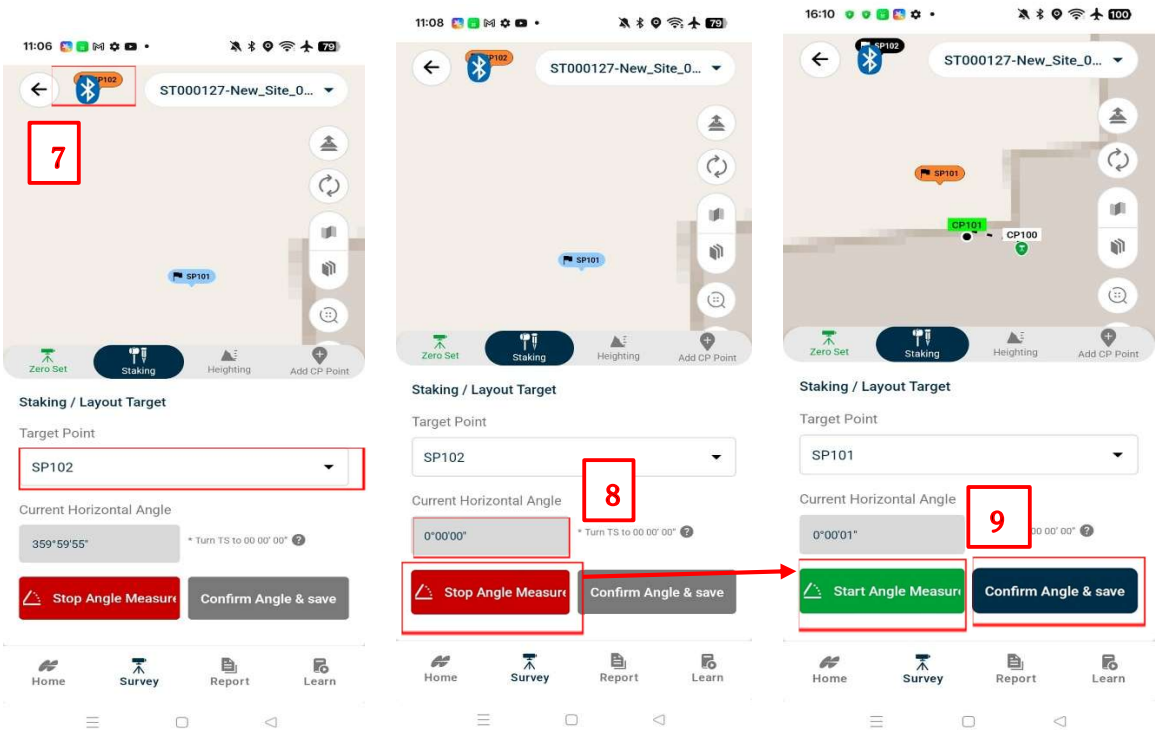
1. You can start the Layout operation from “Layout.”
2. The Layout function is selected from the 4 icons below.
   Zero Set/Orientation, Staking, Heighting and Add New CP.
   You can select 2 setting method, “Backsight Method” and “Resection Method”.
3. You select “Resection Method” first, select two registered CP and measure them one by one using “Measure”.
   Select the Instrument Station and Backsight from the dropdown menus, then sight the prism using the Total Station.



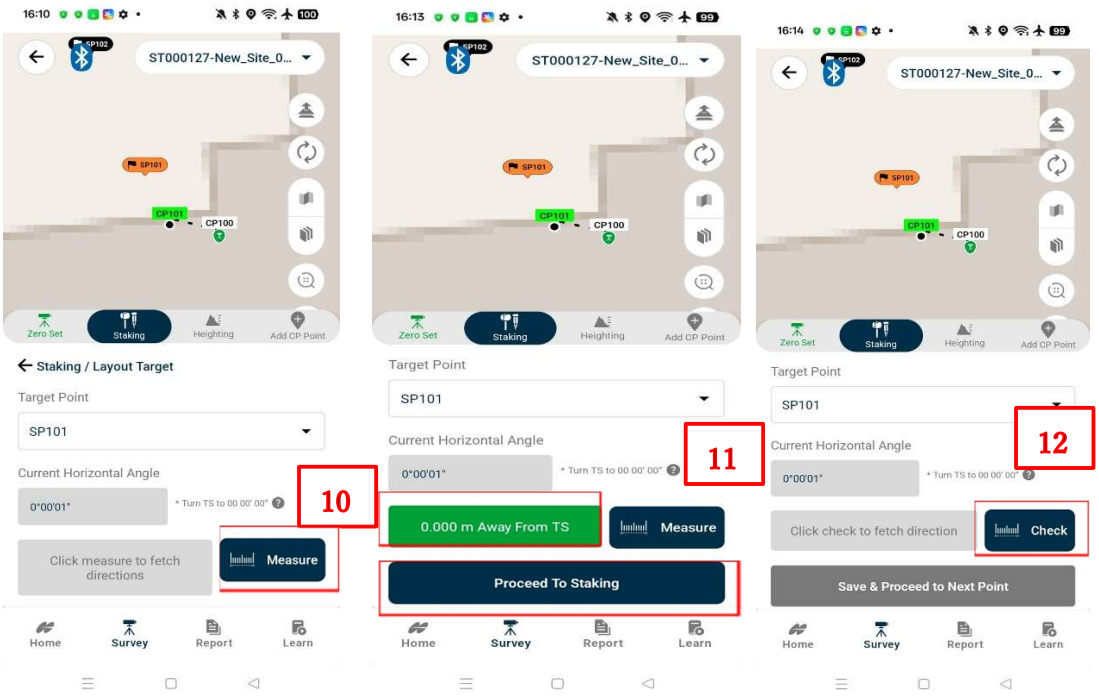
4. Select 1st registered CP and tap “measure” for measurement.
5. Select 2nd registered CP and tap “measure” for measurement. Then Save & Proceed.
6. After measuring the 2nd CP, the instrument position is calculated automatically.
   The Zero Set is also completed automatically at the same time.

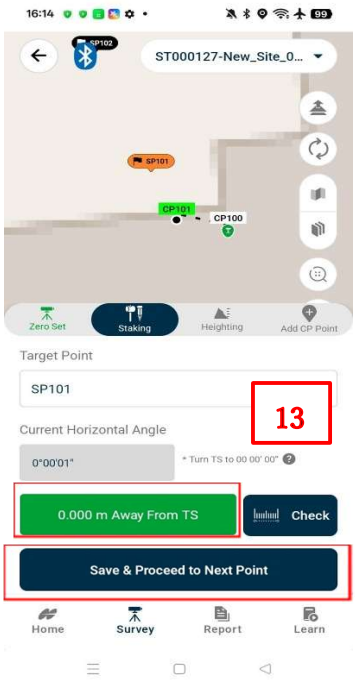


7. Select an SP by tap the point name on the screen or from the point list.
8. The app automatically calculates the horizontal angle to the selected SP.
   Rotate the TS until the displayed angle becomes 0°00'00".
   Tap “Stop Angle Measurement”, Change menu from “Stop Angle Measurement” to “Start Angle Measurement”. And Menu color also changed from Red to Green.
9. Tap “Confirm Angle & save” to fix the angle, then guide the Rodman to the SP.



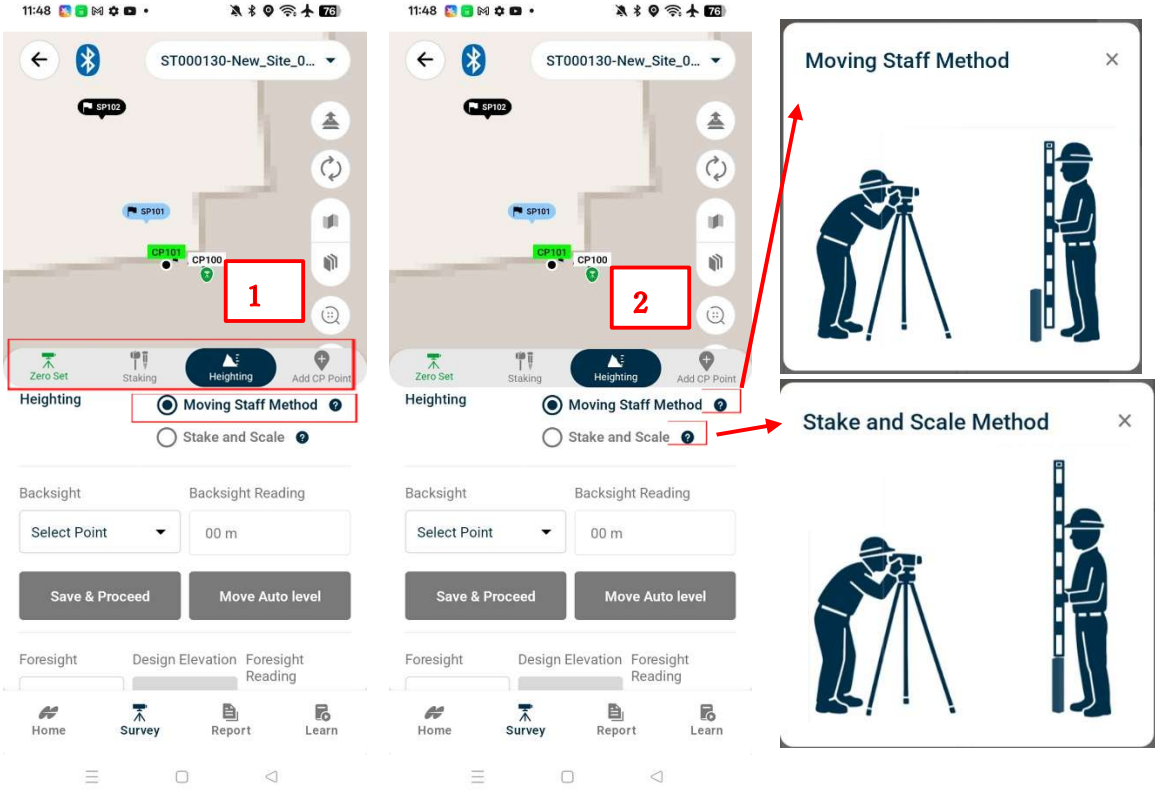
10. Tap “Measure”, guide the Rodman forward and backward according to the on-screen instructions.
11. The Layout point is reached when the forward/backward offset becomes 0.000m, Positioning is complete. tap “Proceed to Staking,” then instruct the Rodman to stake.
12. After the staking is done, tap “Check” to verify the stake position.
13. Tap “Check” to measure the layout setup accuracy.
    The deviation is displayed to confirm whether the setup is within tolerance.
    The deviation is automatically recorded and can be checked in the report.



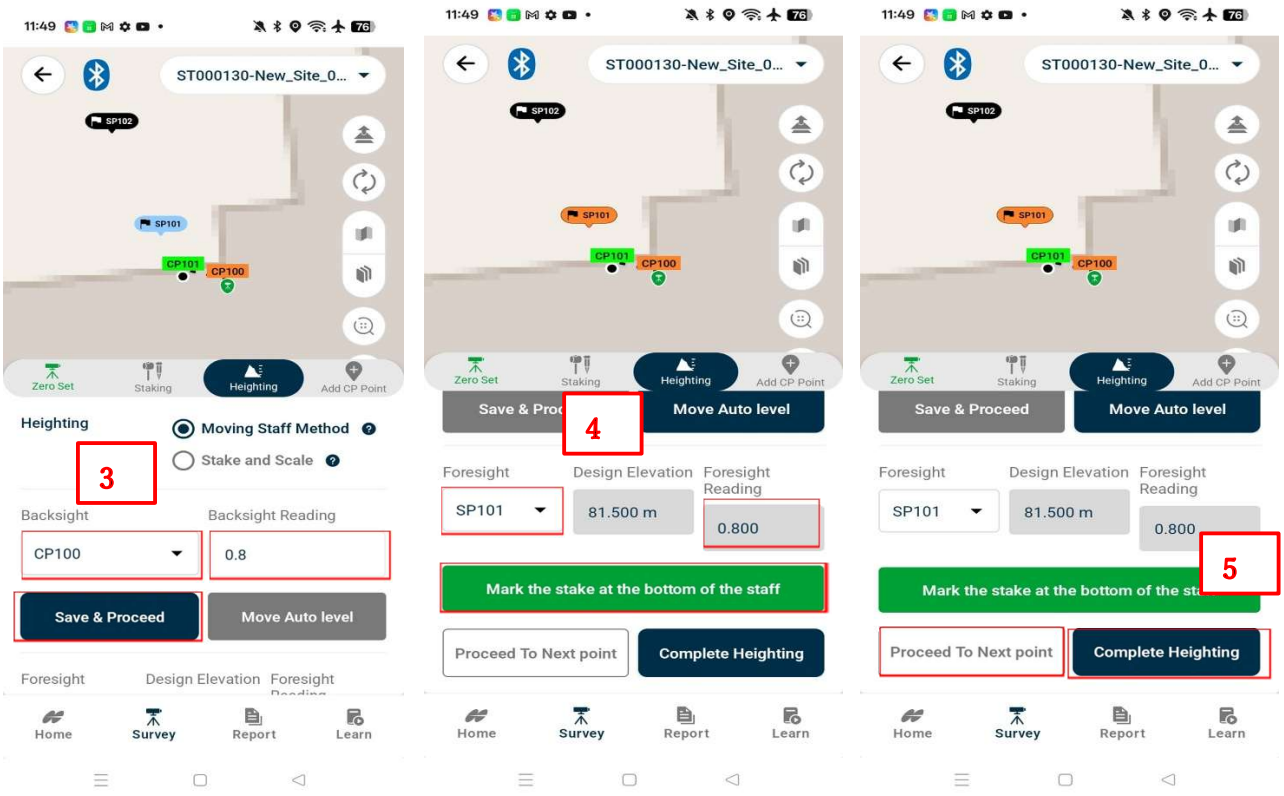


HS-01: Moving Staff Method

1. You can start the Layout operation from “Heighting”.
   You can select 2 height measurement methods,
   “Moving Staff Method” and “Stake and Scale Method”.
2. If you are unsure about the two measurement methods, tap “?” to view an animation showing how to measure.

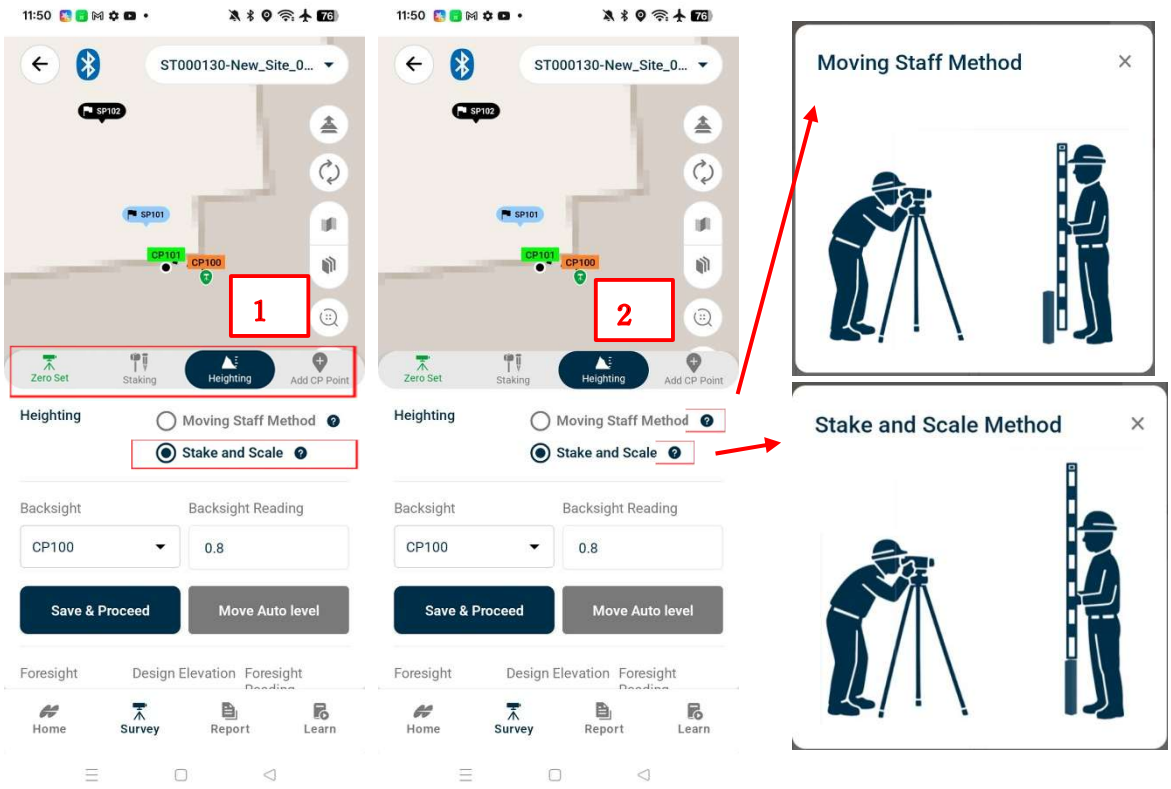


3. Select the Backsight point from the dropdown and enter the reading value.
   After entering the value, tap “Save & Proceed.”
4. In the Moving Staff Method, selecting a Foresight point from the dropdown will display how far below the stake head you should mark.
5. After marking is complete, tap “Complete Heighting” to complete the layout and save the status in the app.
   Then, tap “Proceed to Next Point” to start height measurement for the next layout point.

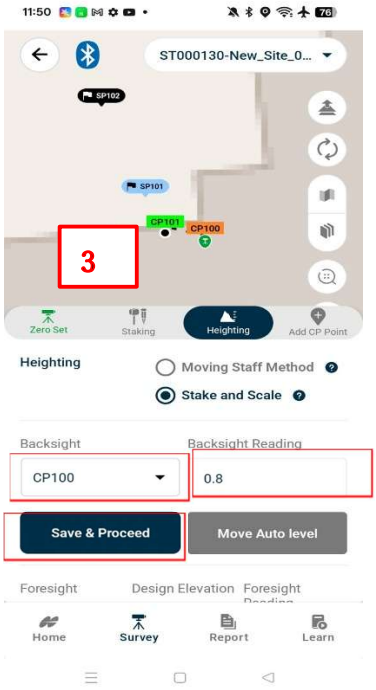


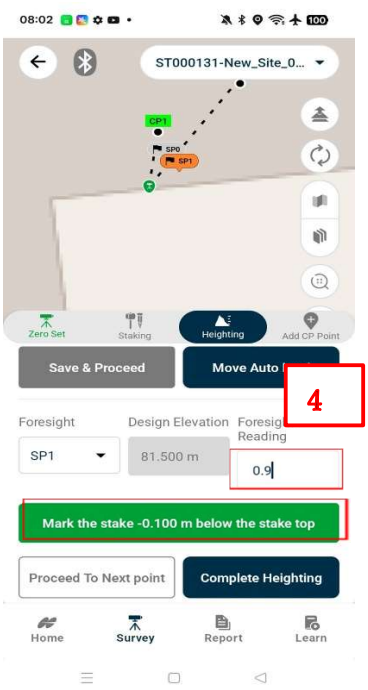
HS-02: Stake and Scale Method

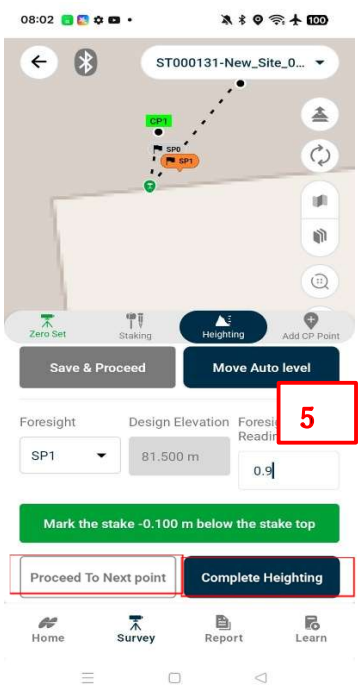
1. You can start the Layout operation from “Heighting”.
   You can select 2 height measurement methods,
   “Moving Staff Method” and “Stake and Scale Method”.
2. If you are unsure about the two measurement methods, tap “?” to view an animation showing how to measure.



3. Select the Backsight point from the dropdown and enter the reading value.
   After entering the value, tap “Save & Proceed.”
4. In the Stake and Scale Method, select the foresight point from the dropdown menu.
   will display how far below the stake head you should mark.
   The operator enters the staff height measured on the pile head into the app.
   The app automatically calculates the height difference from the pile head
   to the design height.
   Measure the displayed height using a scale and mark the height.
5. After marking is complete, tap “Complete Heighting” to complete the layout and save
   the status in the app.
   Then, tap “Proceed to Next Point” to start height measurement for the next layout point.





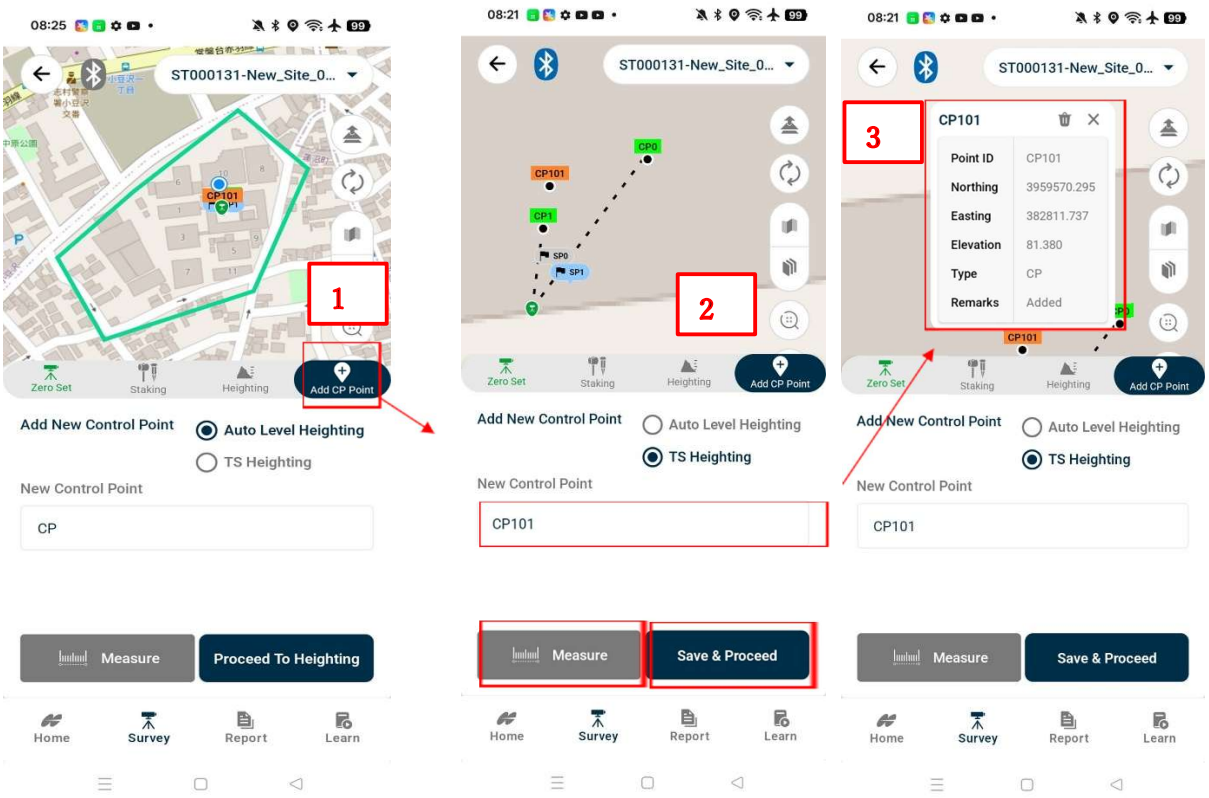


11. New Control Point

1.If a new control point (CP) is required, you can add it from “Add Control Point.”
First, select whether to measure the height using the Total Station or an auto level.

2.To obtain height using the Total Station, enter the new control point name and tap “Measure.”
The system will perform the measurement and capture the coordinates.
If using an auto level, perform the Total Station measurement first, then follow Steps HS-01/02-5.

3.Tap a point on the map to view its coordinates. Tap the trash icon to delete the point.
Tap “Save and Proceed”, crate new CP will record in the app.



4.You can create a daily report from “Reporting.”

5.Tap “Submit & Download” to download the daily report as a PDF to your smartphone.