CoordyNavi

QUICK START GUIDE

Version 2.1.0

⚠ Important Notes for Version 2.1.0

- Update every device on the site to 2.1.0, including Rodman devices, before you continue working. Points, staking results and Zero Set setups do not sync between 2.0.0 and 2.1.0 devices.
- Drawings are now shared with the site team. A subscription is required to share and receive drawings.

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 minimal training.

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 → Prepare data → Create “Site” → Assign Operator/Rodman → Connect the equipment →

- Civil site: Import coordinate data and design data
- Building site: Add drawings by floor → Register points

→ Layout

2. Download App

2.1 Download

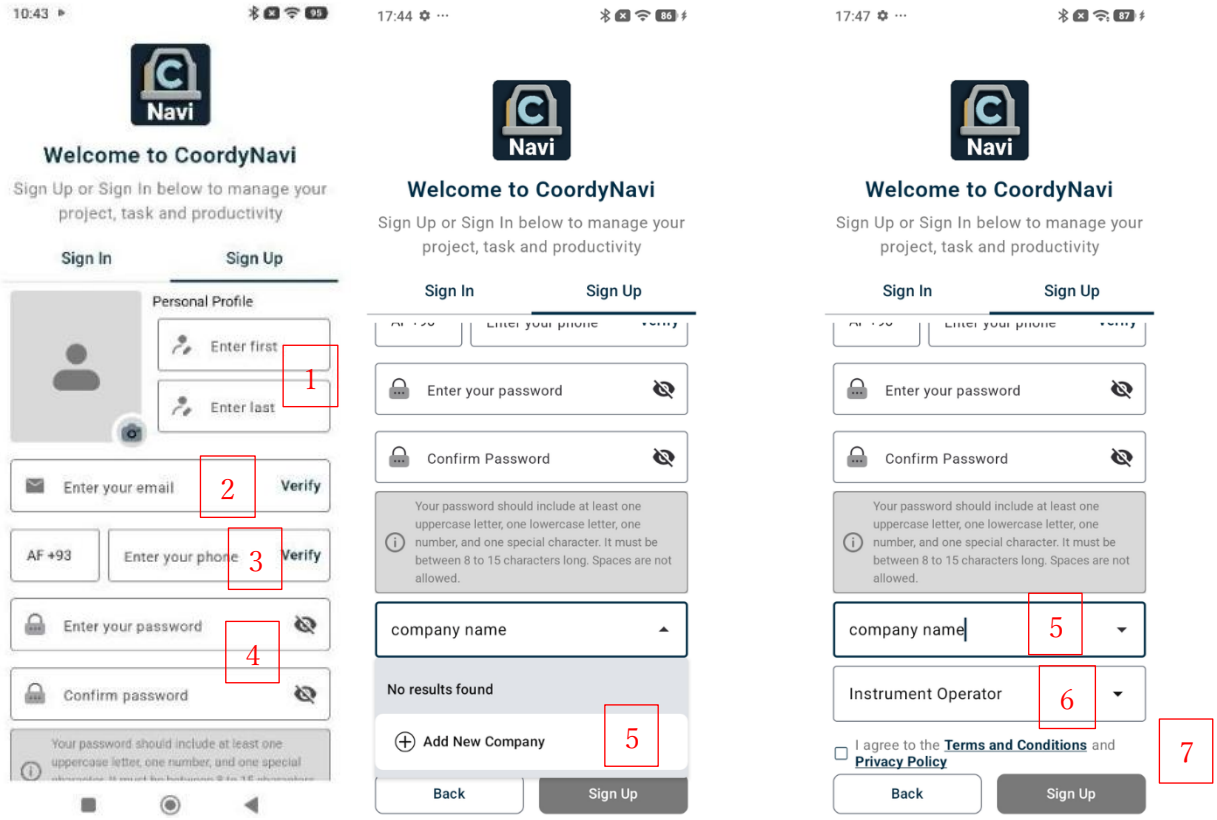
Scan the QR code or visit the URL below to download the app.

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

Please note that CoordyNavi can only be downloaded on devices running Android 12 or later. It will not appear in the Google Play Store on Android 11 or earlier devices.

3. Sign up/Sign in

3.1 Sign up



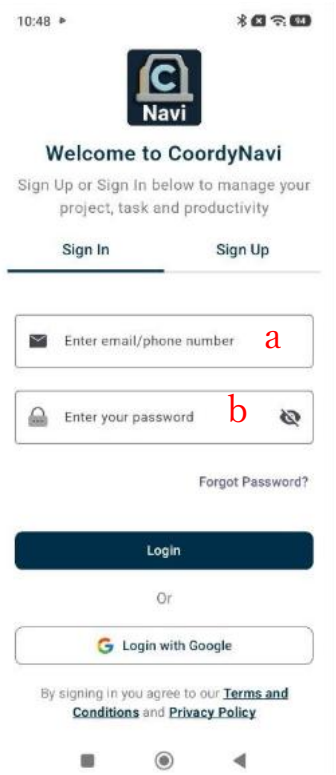
Corresponding to above numbering

1. Enter your first name and last name
2. Enter your email address, then put [Verify] key
3. Enter your phone number from international country code. Please put [Verify] key after entering.
4. Please decide your preferred Password at two times (Same).
   Password must include uppercase, lowercase, a number, and a symbol, be 8–15 characters long, and contain no spaces.
5. Enter your company name, then select it from the list. If it is not listed, tap “Add New Company” to add it.
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.



Please note that in some cases, text may not be displayed correctly during sign-in due to your Android phone's display settings.

*For example, on some **Samsung Android phones**, text may not be visible when the display mode is set to **Dark**.*

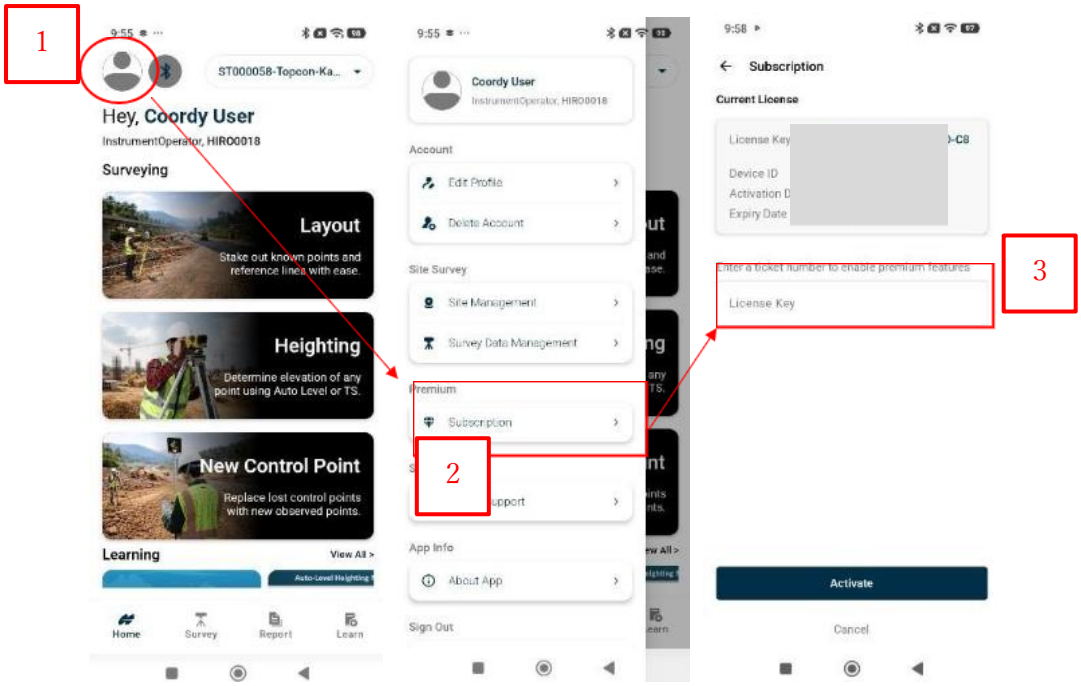
*If you experience this issue, please change the display mode to **Light**. The text should then be displayed correctly.*

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.

1. Tap the profile icon at the top left of the Home screen.
2. Tap “Subscription”.
3. Enter your license key and tap “Activate”.



5. Preparation of Data

5.1 File Format

This app supports CSV files for importing design points, and DXF/DWG files for importing design drawings.

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 can be 1–6 characters using A–Z, 0–9, hyphen (-), and underscore (_) (e.g. CP10, A, BM-01). The first character must be a letter or number. Lowercase letters are automatically converted to uppercase on import.
3. Design Easting, Northing, and Elevation values can be decimals.
4. The Type value must exactly match either “CP” or “SP” (no variations allowed).

5.3 Coordinate System

CoordyNavi supports two coordinate systems. Select one when creating a site:

- **UTM Coordinate System** — Easting and Northing values must be provided in the UTM coordinate system.
- **Local Coordinate System** — A coordinate system defined freely for your site. Values are used as entered.

Please note that when using a **Local Coordinate system, GNSS-based map functions are disabled, including:*
Map display
Current position display on the map

5.4 Design Data (DXF/DWG)

- Supported units: mm, cm, m, ft, in. The unit is detected automatically on import.
- If the drawing has no unit information, you are asked to select the unit. The unit cannot be changed after import.

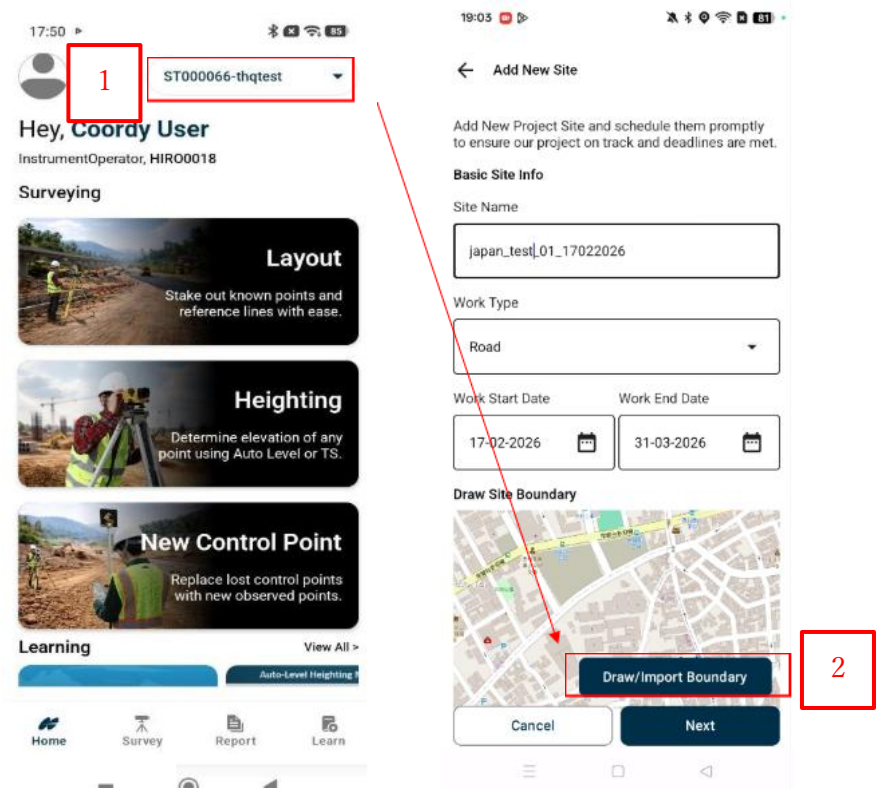
- A site’s drawings share an 80 MB allowance. If a drawing would go over it, CoordyNavi names the drawing that was not shared. It stays usable on your device. To share it, delete another drawing from the site, then import this one again. (50 MB or less per drawing is recommended for smooth operation.)

6. Add new Site

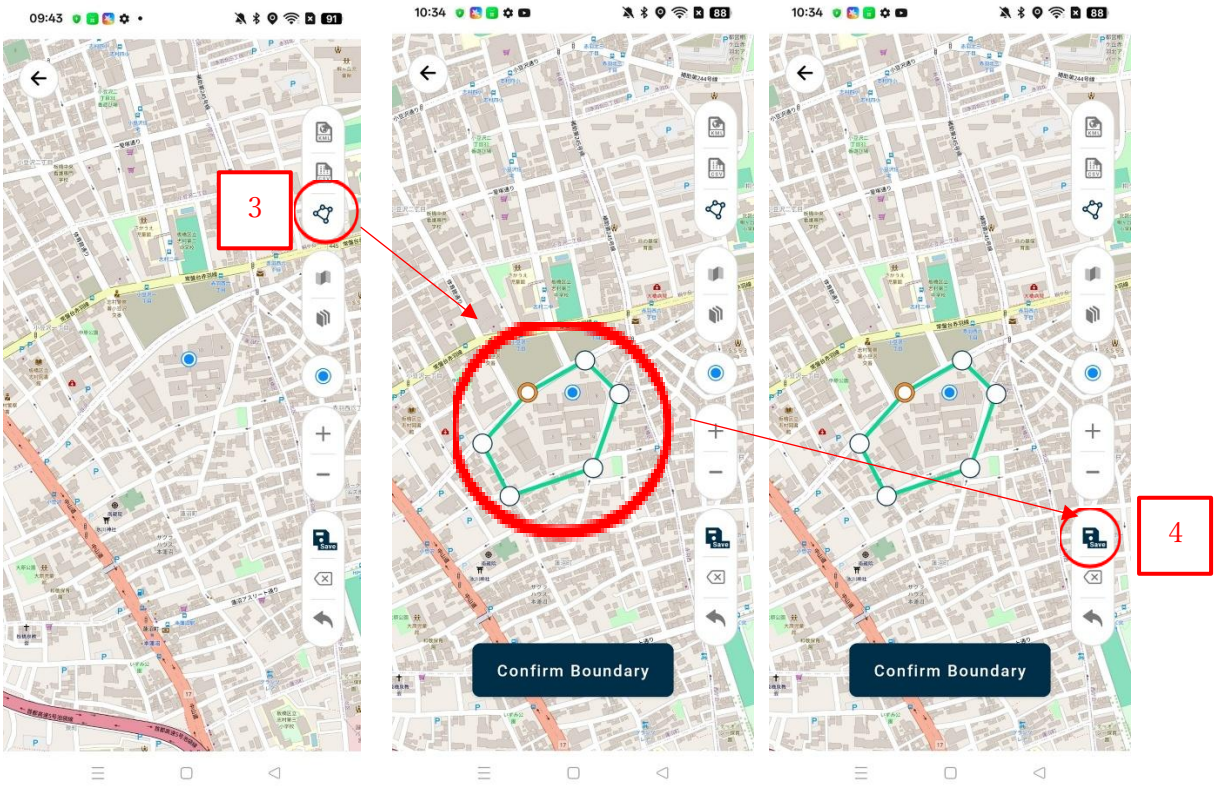
Before starting your work, create a new site using "Add New Site."
The steps differ depending on the Coordinate system. Follow the steps for your site:

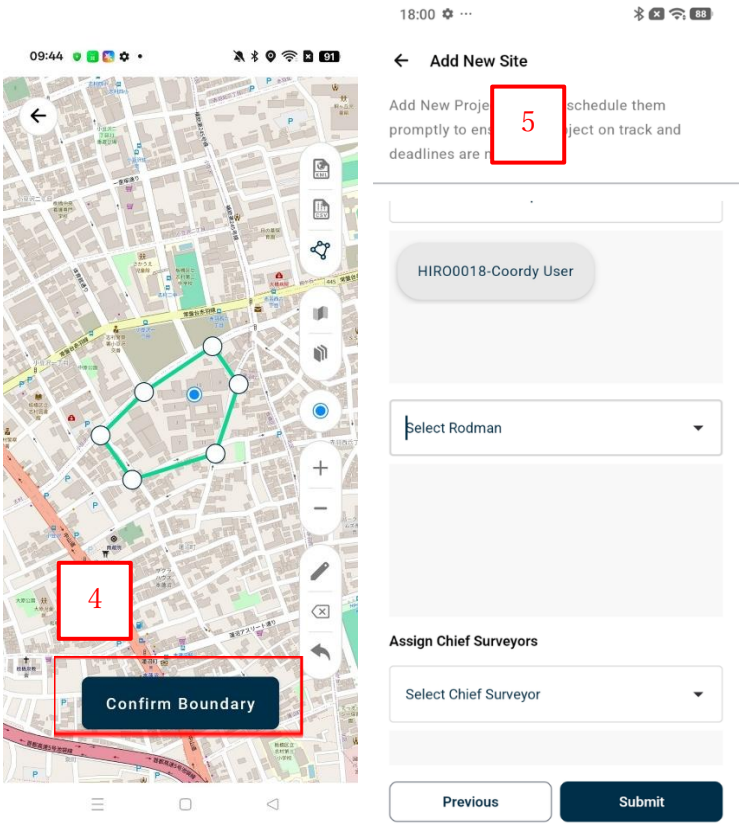
- For a Global (UTM) site → see 6.1
- For a Local site → see 6.2

6.1 UTM Coordinate System



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.”



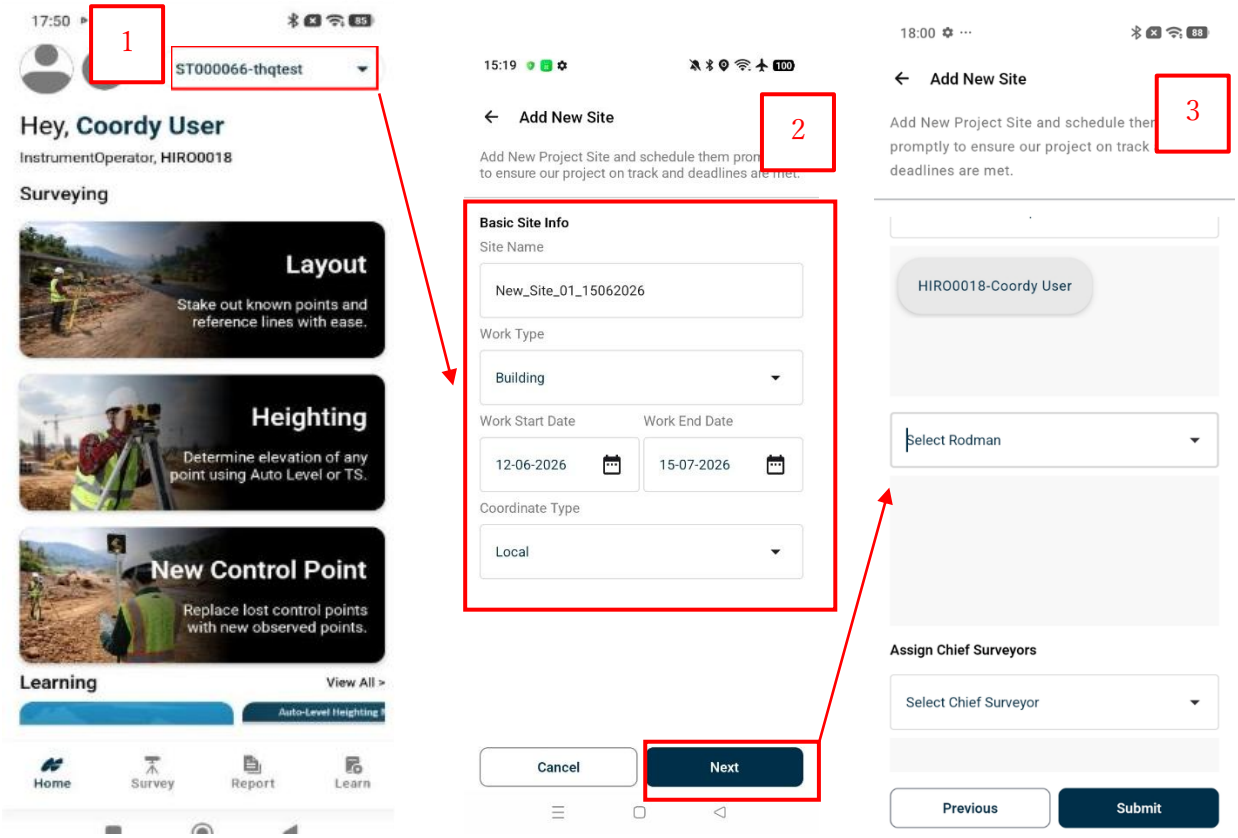


Please note that if the Observation Screen Menu Is Not Fully Displayed, the menu on the right side of the observation screen may not be fully displayed due to your Android phone's display settings.

*For example, on some Samsung Android phones, there is an **Easy Mode** setting in the display settings. If the menu is not displayed correctly, please turn Easy Mode off. The menu should then be displayed correctly.*

3. Tap the icon highlighted in red, then tap on the map to draw the boundary (Green line).
   **While CoordyNavi is getting your current location, "Acquiring current location…" is shown. If "Location unavailable" appears, check that location is turned on and that you have a clear view of the sky, then tap "Retry".*
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. You can also assign Chief Surveyors (CoordyCAD users in your company) under "Assign Chief Surveyors". This is optional.
   **Please note that reports cannot be generated unless RD information is assigned, so be sure to set the RD before exporting reports.*

6.2 Local Coordinate System



1. Tap the area highlighted in red to start "Add New Site."
2. Enter the Site Name, Work Type, and Duration, select "Local" as the Coordinate Type, then tap "Next." No boundary is required.
3. 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. You can also

assign Chief Surveyors (CoordyCAD users in your company) under “Assign Chief Surveyors”. This is optional.

6.3 Work Type and Site Mode

The Work Type you select when creating a site determines how CoordyNavi works on that site.

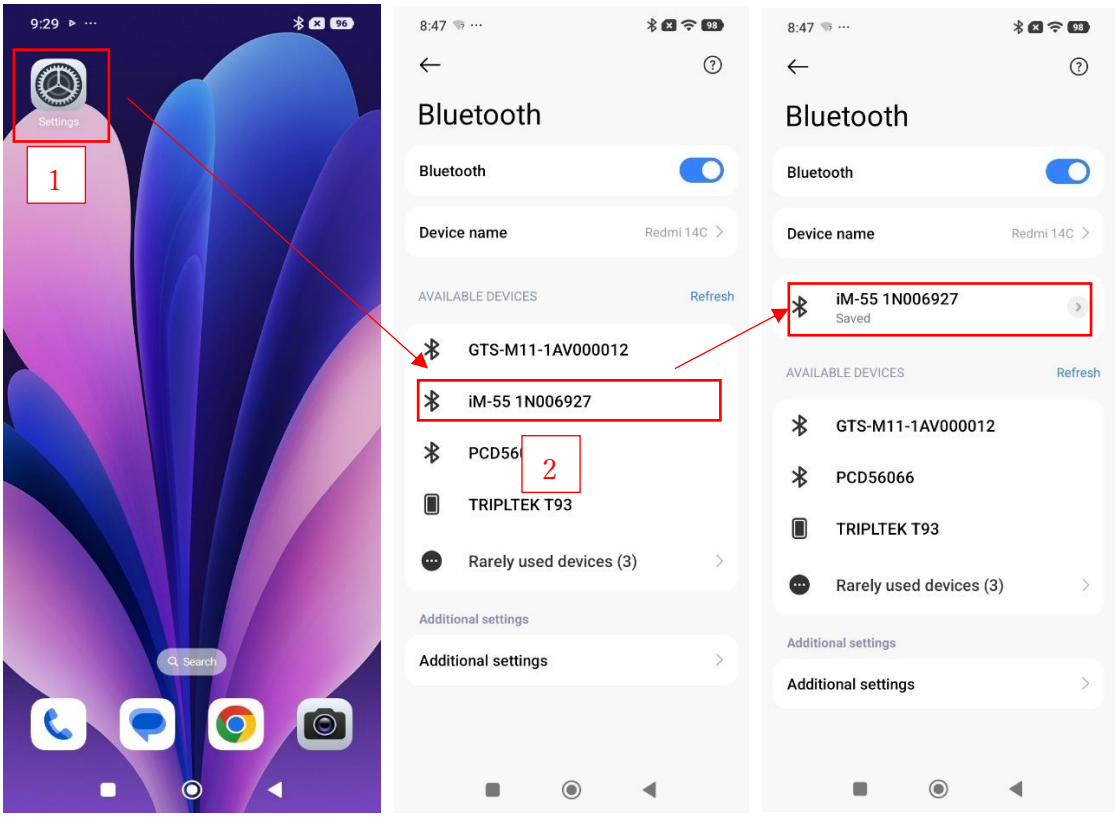
- Any Work Type other than Building (e.g. Road, Railway, Bridge) — The site runs in Civil Mode. Design points are imported from CSV, and drawings are displayed for reference. Continue to Part A (Chapter 9).
- Building — The site runs in Building Mode. Drawings are managed by floor, and you can register points directly from the drawing. Continue to Part B (Chapter 10).

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?

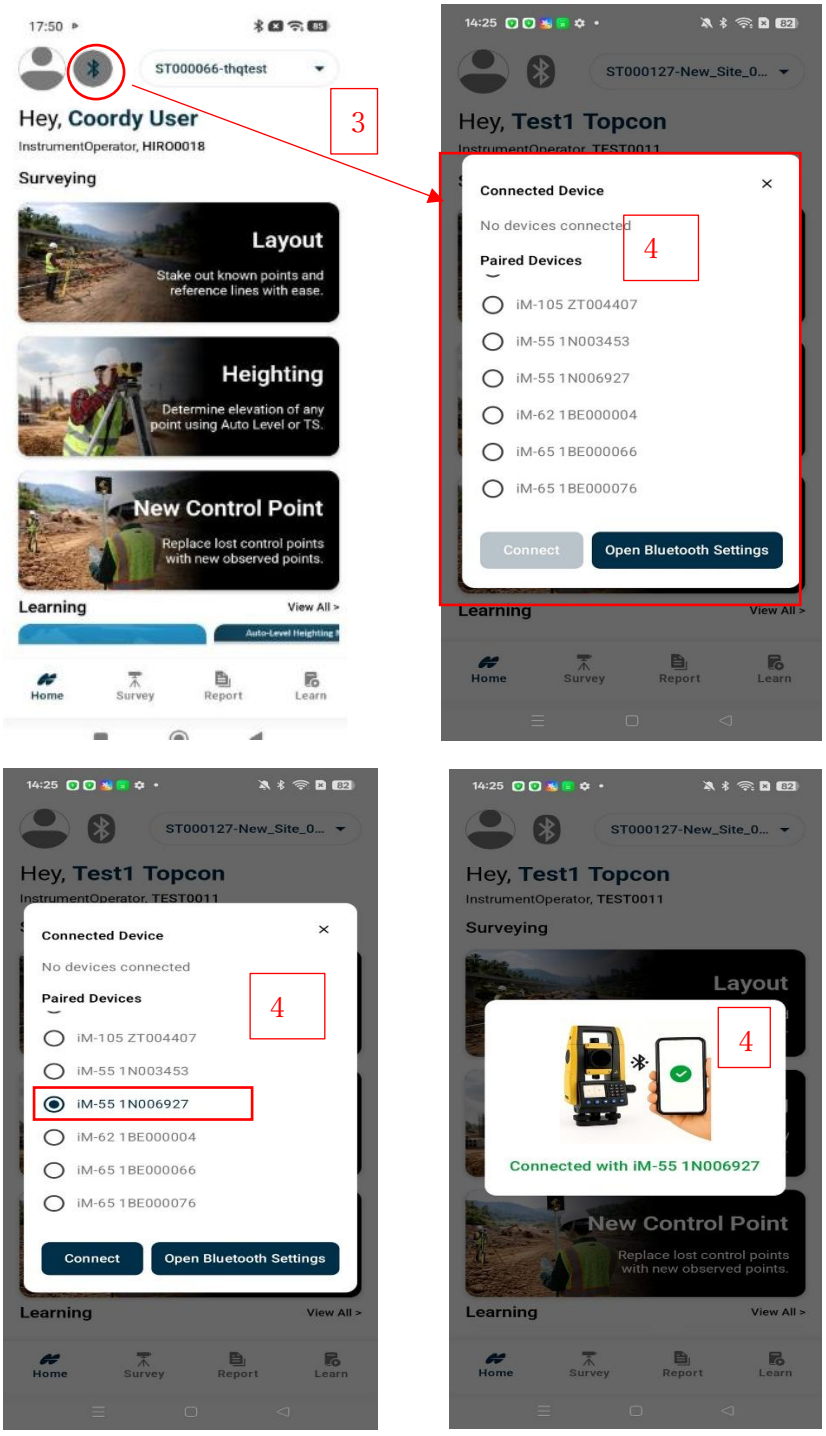
8. Connect to Total station (App)



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.

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

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



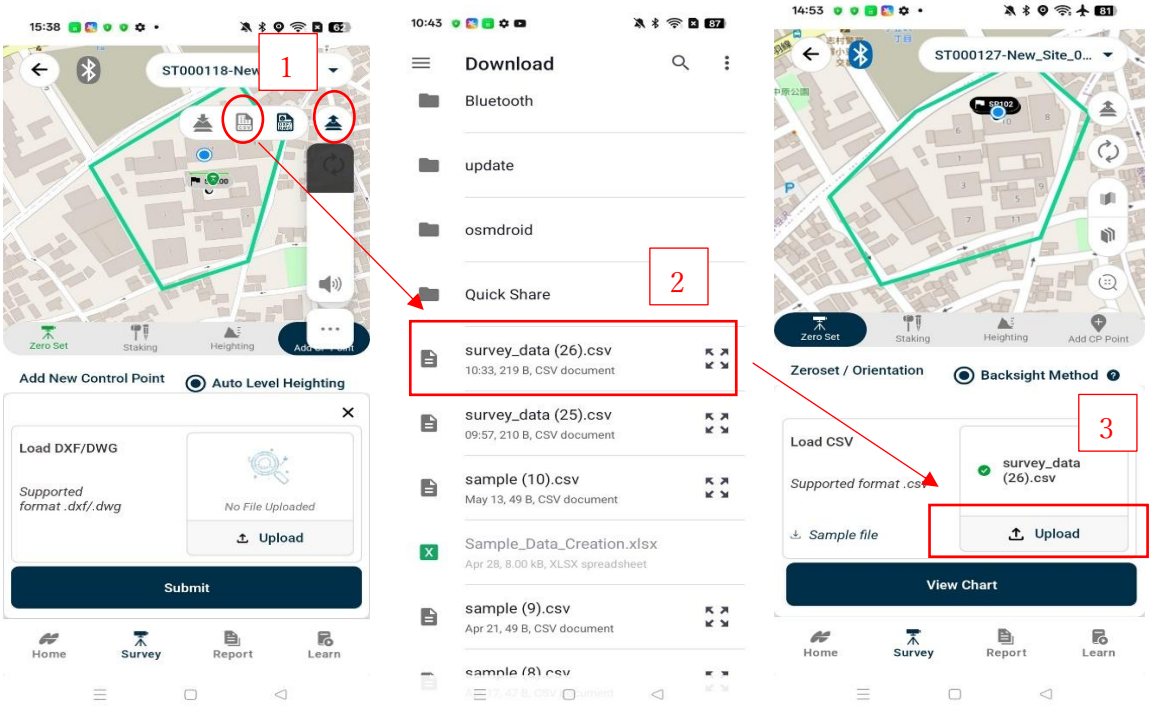
3. Tap the Bluetooth icon at the top of the app.
4. A pop-up will appear. Select the serial number of the Total Station you want to connect to, then tap “Connect.”
   If the desired Total Station is not listed, complete Step 1 first.

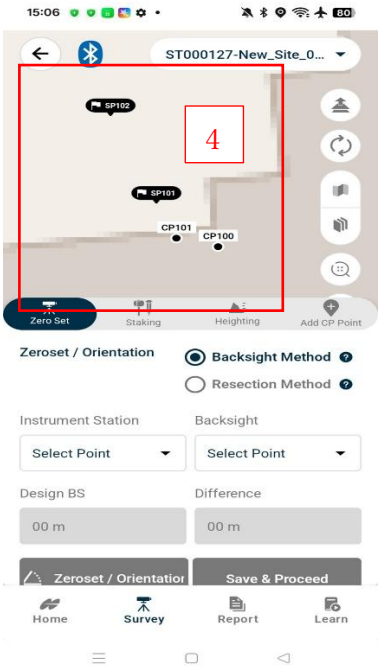
Part A: Civil Sites

9. Data Input

9.1 Data Input (3D Coordinate)

1. Tap the tool icon, then 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 tool icon, then the “DXF/DWG” icon to import a design file for the site.

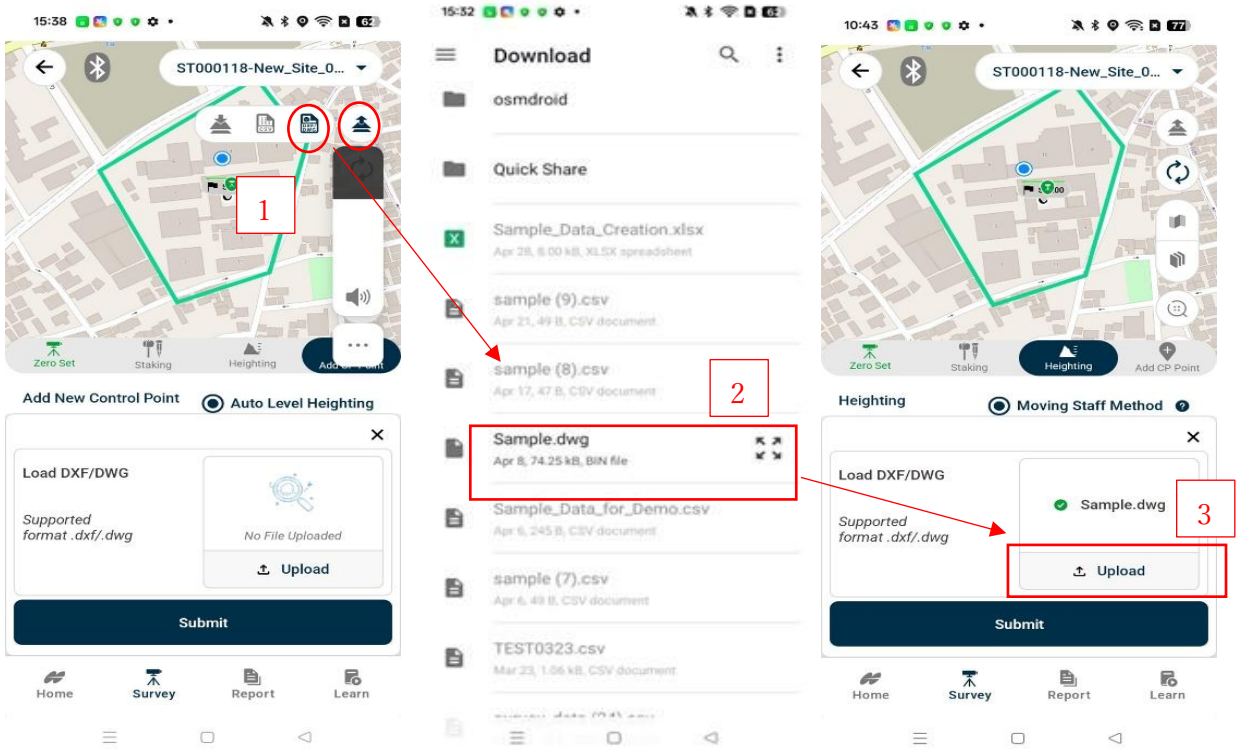
2.Select the DWG file saved on the smartphone.

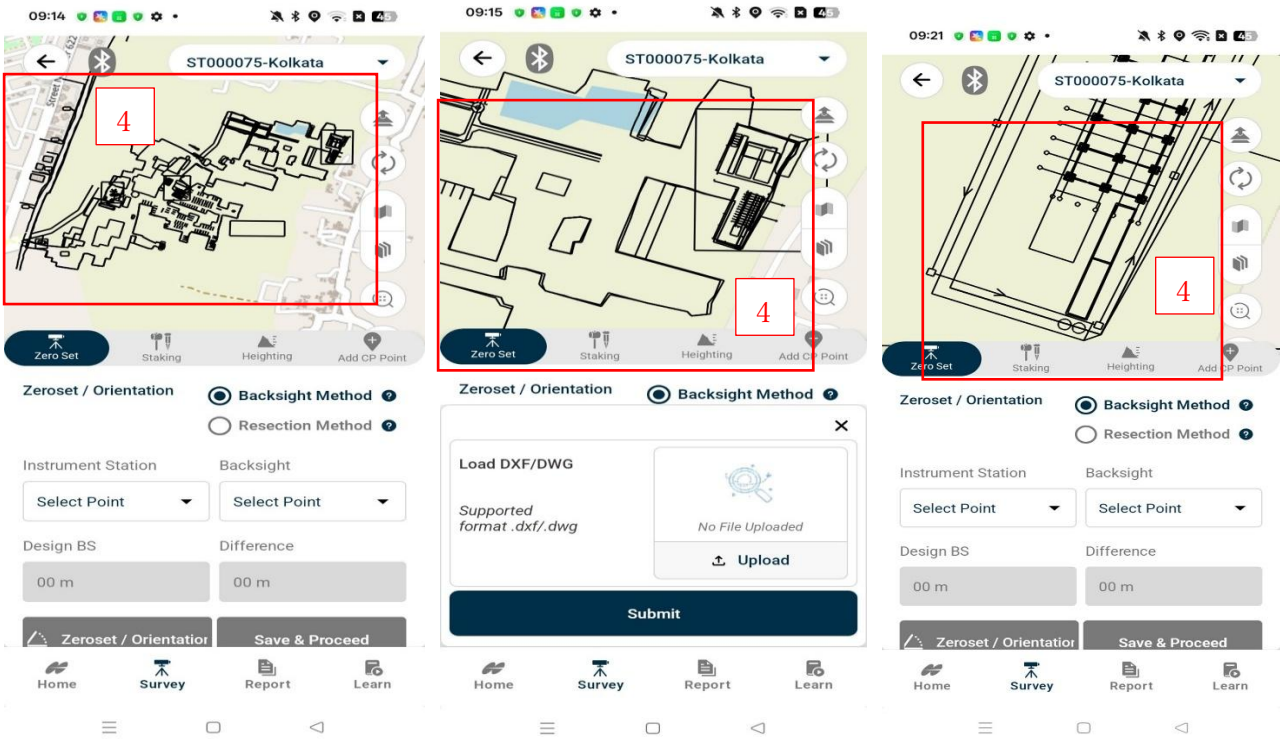
3.Tap “Upload” to load the selected file.

4. Imported design lines are displayed on the screen.

On a Civil site, drawings are displayed for reference only. Registering points from the drawing, Measure, and Offset are available on Building sites.

Drawings imported by the Instrument Operator are uploaded to the site automatically and delivered to every team member with a subscription. Rodman users do not import drawings; they receive them automatically. When a newer version of a drawing is available, a notice asks you to choose “Apply now” or “Later”. Your points are not affected.





After importing the coordinate data, continue to 13 Layout.

Part B: Building Sites

In Building Mode, you can:

- Add drawings for multiple floors.
- Register points directly on the drawing and use them as layout targets.
- Measure distances and create offset lines on the drawing.
- Edit points directly from the drawing.
- Copy points to other floors.

10. Floors and Drawings

On a Building site, drawings are managed by floor. Add a drawing for each floor before you start working.

10.1 Add a Drawing (Instrument Operator)

1. Tap the tool icon, then the “DXF/DWG” icon. The Select Drawing dialog opens.
2. Tap “Add Drawing” and select the DXF/DWG file saved on the smartphone.
3. If “Drawing unit not found” appears, select the unit used in the drawing and tap “Apply unit”.

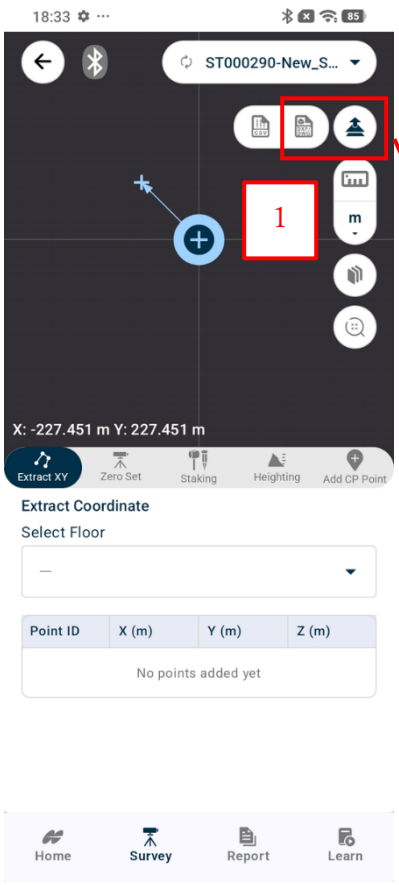
**If the drawing would be placed more than 1 km from the site, “Placement looks incorrect” appears. Keep the unit, apply another unit, or tap “Cancel import”.*

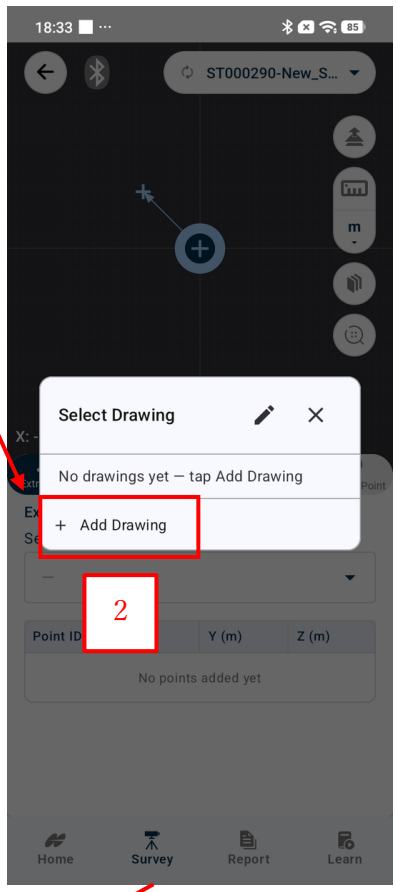
4. Enter a name for the floor, then tap ✓. Once the floor has a name, the floor and its drawing are shared with your team automatically.

**For file size and supported units, see 5.4.*

**To import CSV points on a Building site, open the floor first. The points are imported onto the open floor.*

**When a newer version of a drawing is available, a notice asks you to choose “Apply now” or “Later”. Only the floor you are viewing asks; drawings on other floors update automatically. Your points are not affected.*

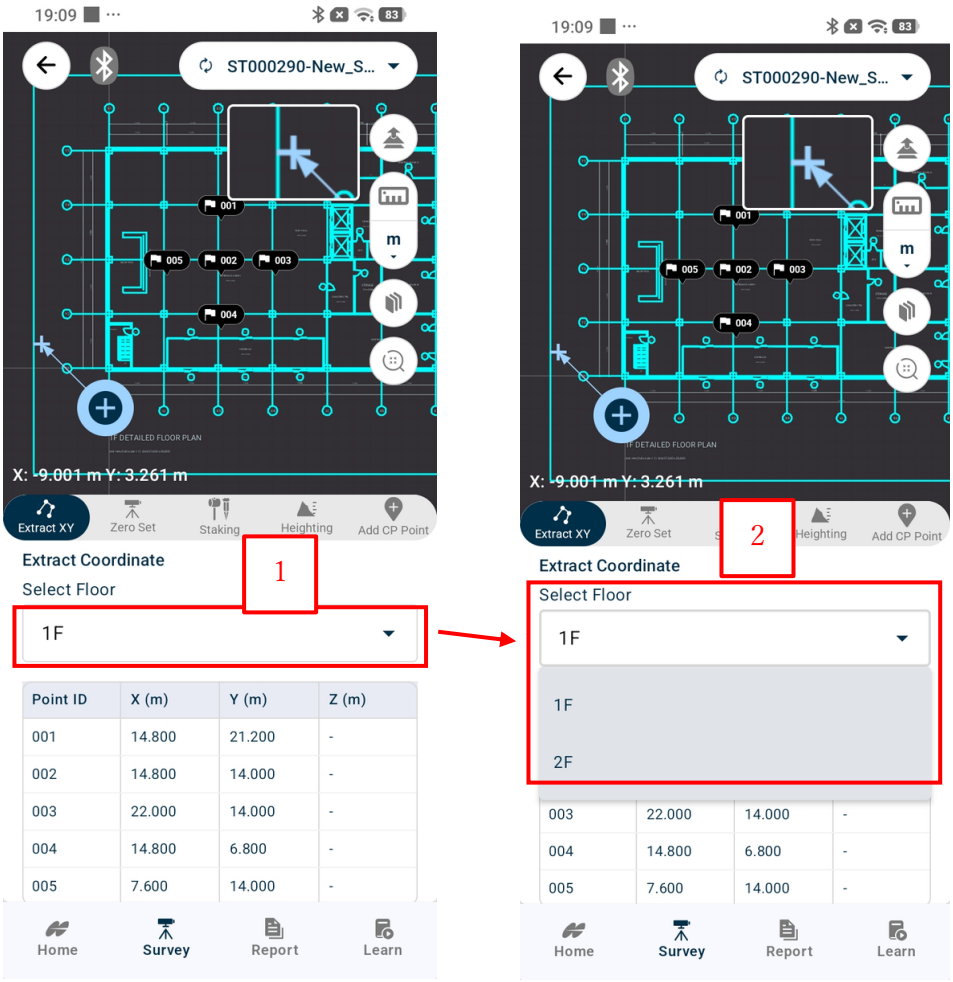

18:33
ST000290-New_S...
1
m
X: -227.451 m Y: 227.451 m
Extract XY
Zero Set
Staking
Heighting
Add CP Point
Extract Coordinate
Select Floor
Point ID
X (m)
Y (m)
Z (m)
No points added yet
Home
Survey
Report
Learn


18:33
ST000290-New_S...
m
Select Drawing
No drawings yet — tap Add Drawing
+ Add Drawing
2
Point ID
Y (m)
Z (m)
No points added yet
Home
Survey
Report
Learn


18:34
ST000290-New_S...
4
Selec
1F
office_1F_floor...
DWG
mm
Auto-detected
RL :
RL
m
+ Add Drawing

10.2 Switch Floors

1. Tap the “Select Floor” box in the Extract XY panel. A list of floors appears.
2. Tap the floor you want to work on.

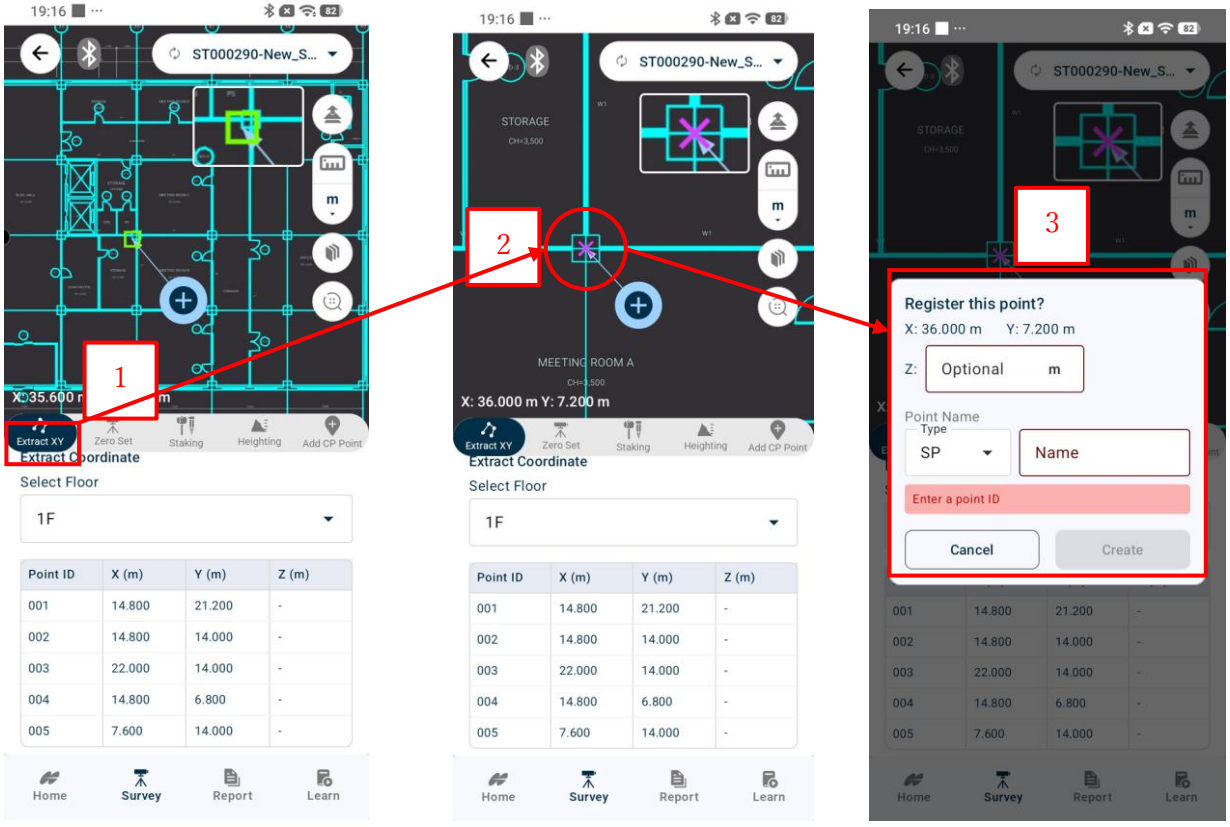


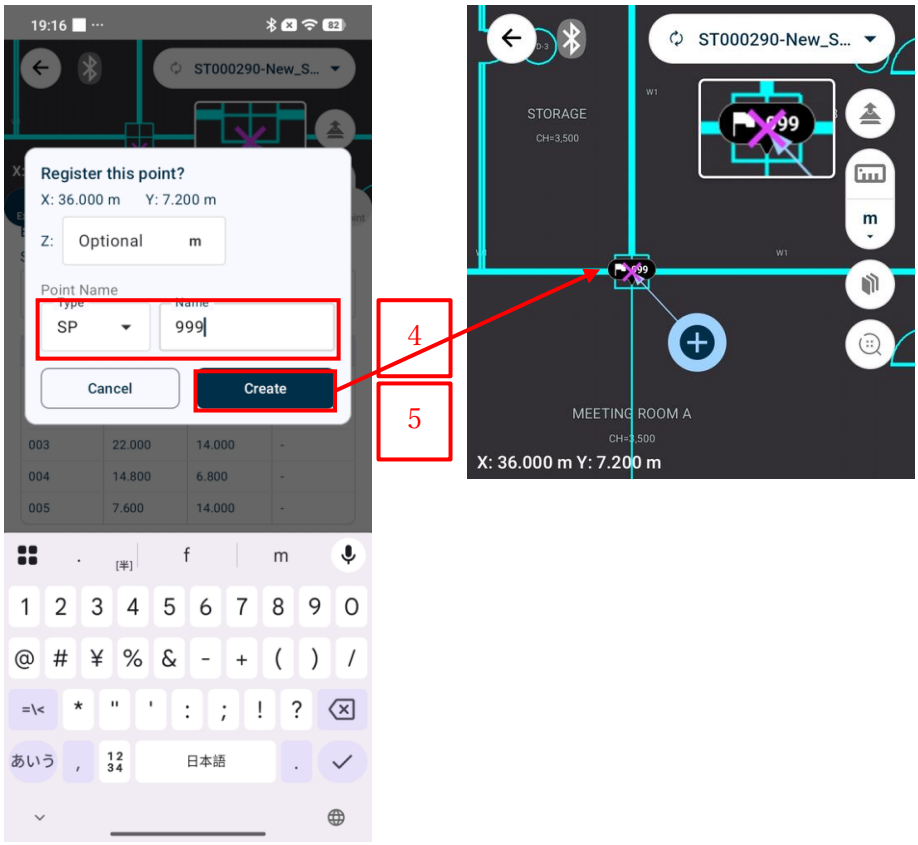
11. Register Points with Extract XY (Instrument Operator)

Get coordinates from the drawing and register them as points.

1. Tap the “Extract XY” tab. A cursor appears on the drawing.
2. Drag the cursor to the position you want. It snaps to nearby endpoints, midpoints, and intersections. The X and Y values are shown at the bottom left.
3. Tap the cursor. The “Register this point?” dialog opens.
4. Select the Type (CP or SP), enter the Name, and enter Z if needed.
5. Tap “Create”. The point is added to the drawing.

**The coordinate table is read-only. To edit or delete a point, tap the point on the drawing (see 11.1). To copy points to another floor, see 11.2.*

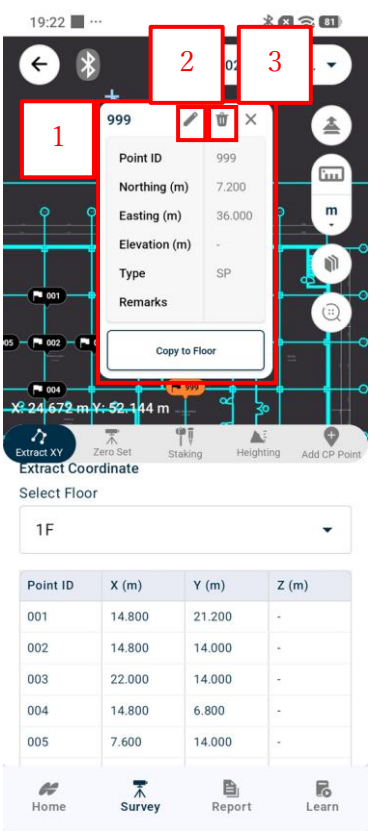


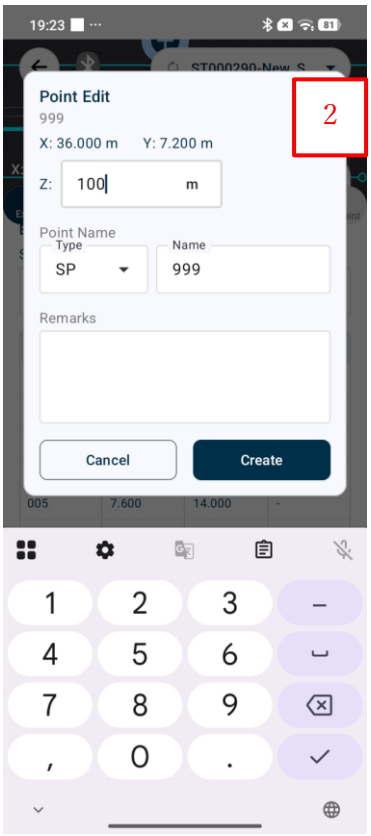

Register this point?
X: 36.000 m Y: 7.200 m
Z: Optional m
Point Name
Type
Name
SP
999
Cancel
Create
4
5
ST000290-New_S...
STORAGE
CH=3,500
MEETING ROOM A
CH=3,500
X: 36.000 m Y: 7.200 m

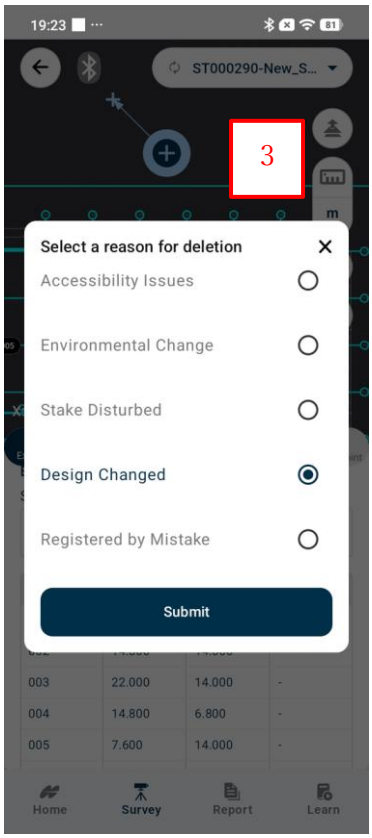
11.1 Edit or Delete a Point (Instrument Operator)

1. Tap a point on the drawing. The point details window opens.
2. Tap the pencil icon. In the Point Edit window, change the Name (Point ID), Type, Z, or Remarks, then tap “Create” to save the changes.
3. To delete the point, tap the trash icon, select a reason (e.g. “Design Changed” or “Registered by Mistake”), and tap “Submit”.

**A point used as the instrument station or backsight of a Zero Set (Backsight Method) cannot be edited.*





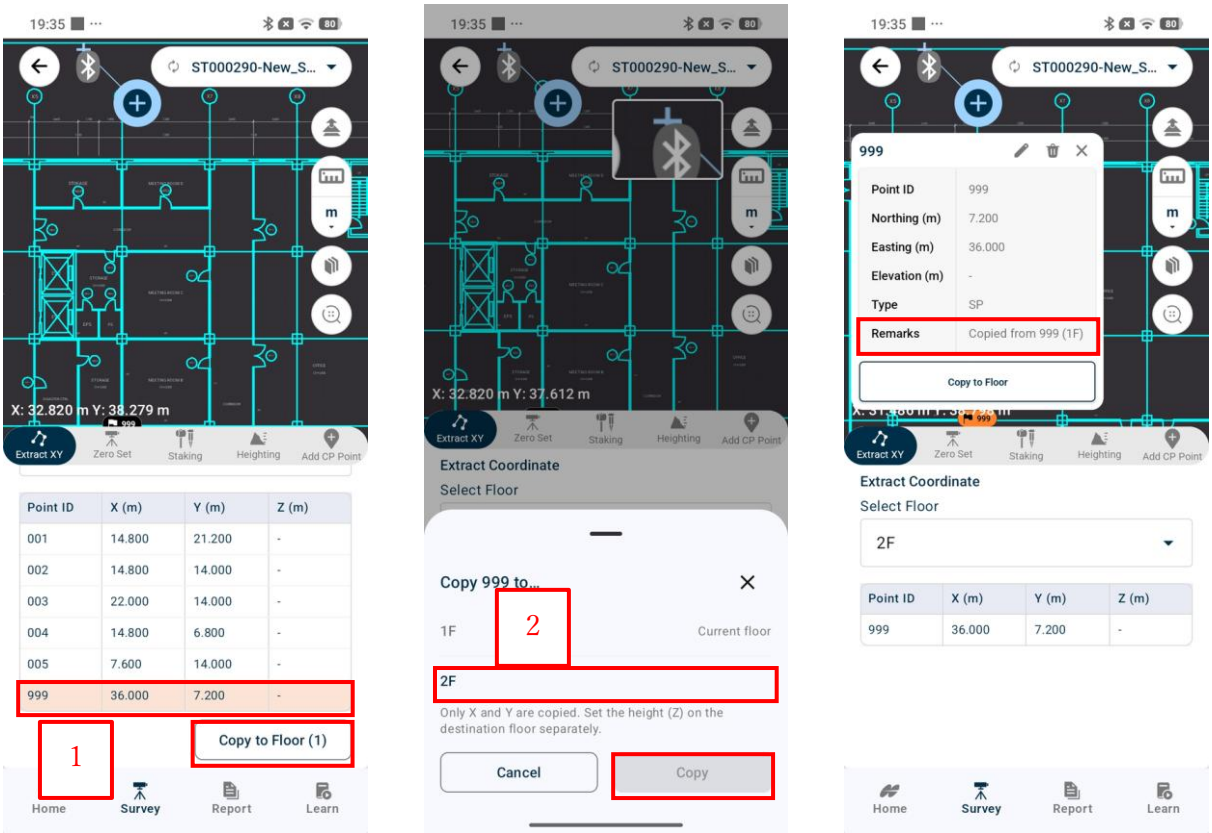


11.2 Copy Points to Another Floor (Instrument Operator)

On a site with two or more floors, you can copy a point’s X and Y to another floor.

1. Tap a point on the drawing and tap “Copy to Floor”, or tap the rows you want in the coordinate table (each selected row is highlighted) and tap “Copy to Floor (n)”.
2. Select the destination floor and tap “Copy”.

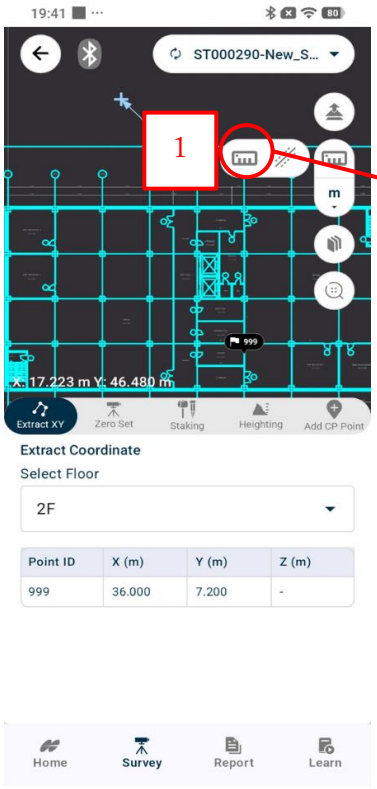
**Only X and Y are copied. Set the height (Z) on the destination floor. Each copy gets the remark “Copied from <ID> (<floor>)”.*

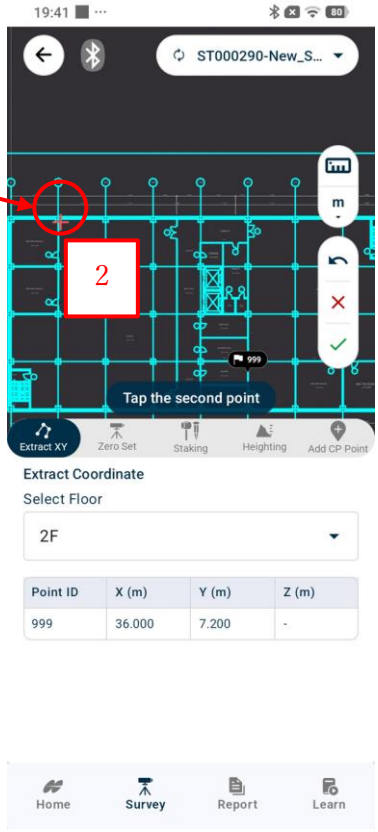

19:35
ST000290-New_S...
X: 32.820 m Y: 38.279 m
Extract XY
Zero Set
Staking
Heighting
Add CP Point
Point ID X (m) Y (m) Z (m)
001 14.800 21.200 -
002 14.800 14.000 -
003 22.000 14.000 -
004 14.800 6.800 -
005 7.600 14.000 -
999 36.000 7.200 -
1
Copy to Floor (1)
Home
Survey
Report
Learn
X: 32.820 m Y: 37.612 m
Extract Coordinate
Select Floor
Copy 999 to...
1F
Current floor
2
2F
Only X and Y are copied. Set the height (Z) on the destination floor separately.
Cancel
Copy
999
Point ID 999
Northing (m) 7.200
Easting (m) 36.000
Elevation (m) -
Type SP
Remarks Copied from 999 (1F)
Copy to Floor
Extract Coordinate
Select Floor
2F
Point ID X (m) Y (m) Z (m)
999 36.000 7.200 -

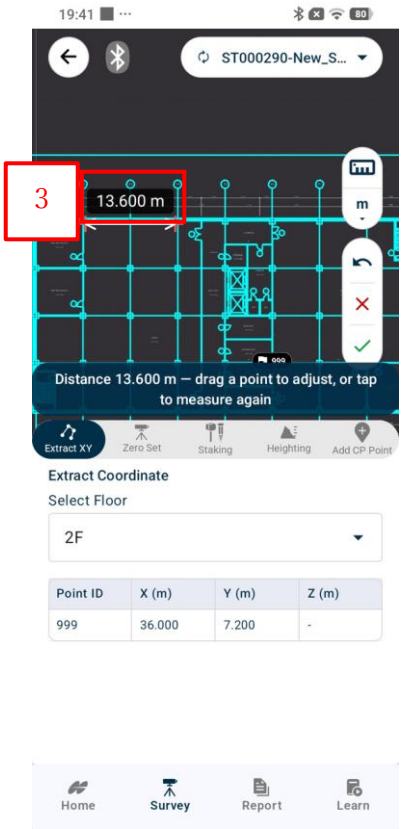
12. Measure and Offset

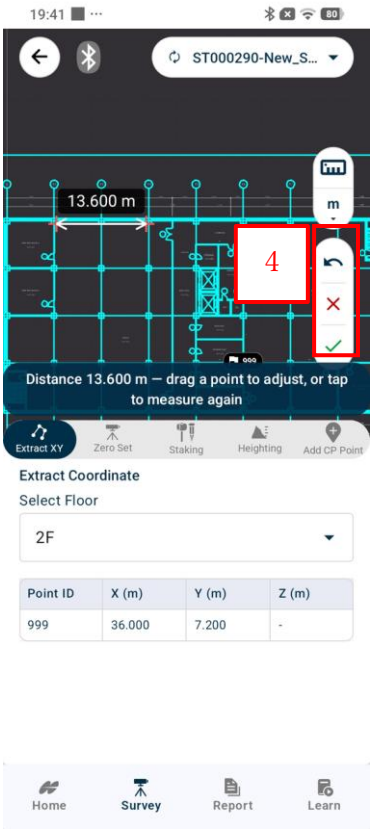
12.1 Measure

1. Tap the Measure and Offset tool icon, then tap the Measure icon.
2. Tap the first point on the drawing.
3. Tap the second point. The distance is displayed.
4. Tap ✓ to finish, or × to cancel. Tap ↶ to undo the last step.


19:41
ST000290-New_S...
1
m
X: 17.223 m Y: 46.480 m
Extract XY
Zero Set
Staking
Heighting
Add CP Point
Extract Coordinate
Select Floor
2F
Point ID
X (m)
Y (m)
Z (m)
999
36.000
7.200
-
Home
Survey
Report
Learn

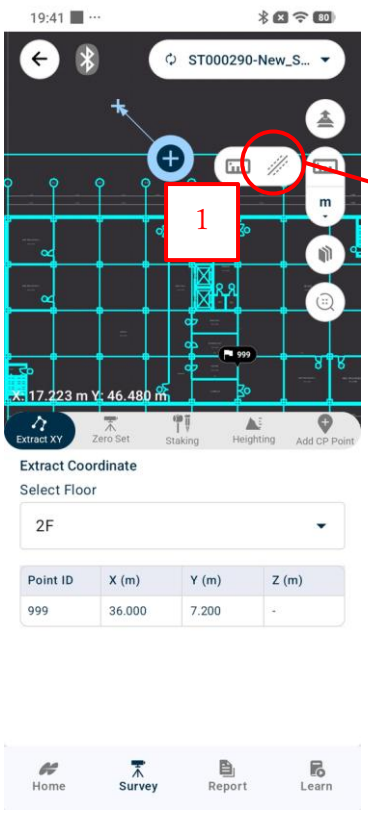

19:41
ST000290-New_S...
2
m
Tap the second point
Extract XY
Zero Set
Staking
Heighting
Add CP Point
Extract Coordinate
Select Floor
2F
Point ID
X (m)
Y (m)
Z (m)
999
36.000
7.200
-
Home
Survey
Report
Learn

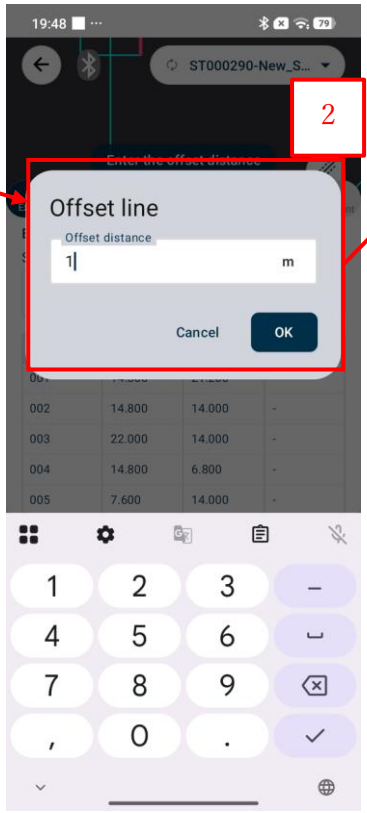

19:41
ST000290-New_S...
3
13.600 m
m
Distance 13.600 m — drag a point to adjust, or tap to measure again
Extract XY
Zero Set
Staking
Heighting
Add CP Point
Extract Coordinate
Select Floor
2F
Point ID
X (m)
Y (m)
Z (m)
999
36.000
7.200
-
Home
Survey
Report
Learn

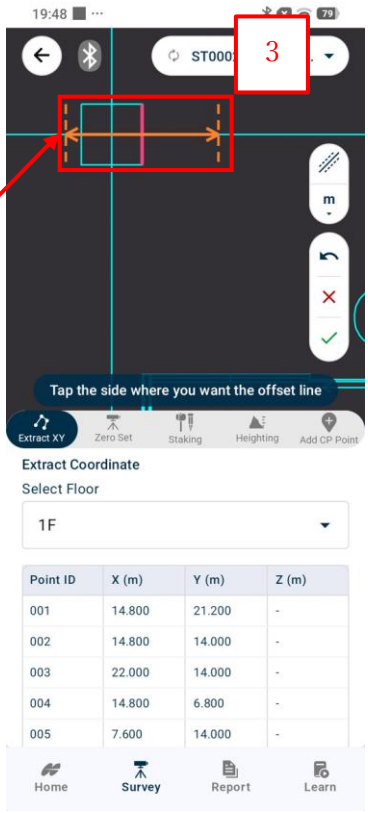

19:41
ST000290-New_S...
13.600 m
4
m
Distance 13.600 m — drag a point to adjust, or tap to measure again
Extract XY
Zero Set
Staking
Heighting
Add CP Point
Extract Coordinate
Select Floor
2F
Point ID
X (m)
Y (m)
Z (m)
999
36.000
7.200
-
Home
Survey
Report
Learn

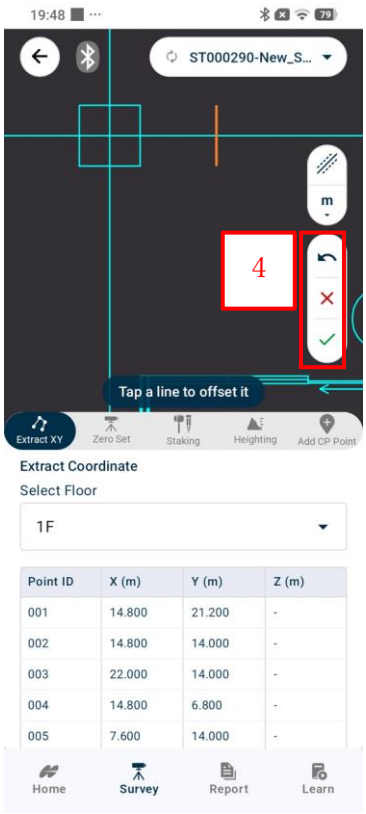
12.2 Offset

1. Tap the Measure and Offset tool icon, then tap the Offset icon.
2. Tap the line you want to offset. The “Offset line” pop-up appears. Enter the offset distance and tap “OK”.
3. Tap the side where you want the offset line. A new line is created.
4. Tap ✓ to finish, or ✕ to cancel. Tap ↶ to undo the last step.





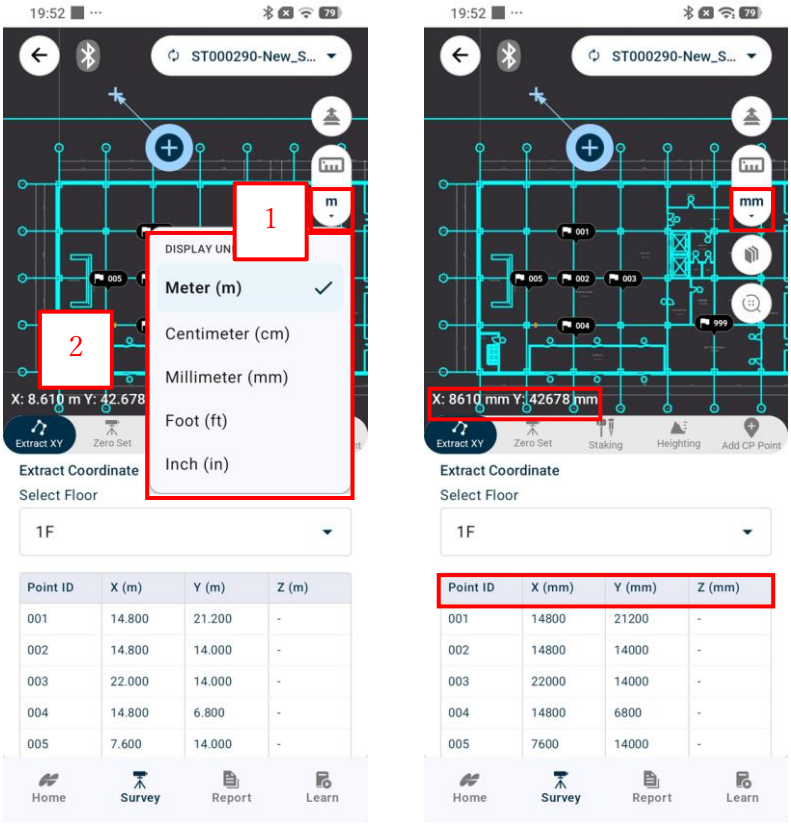




12.3 Display Unit

1. Tap the unit button (e.g. “m”) beside the Measure and Offset tools.
2. Select Meter (m), Centimeter (cm), Millimeter (mm), Foot (ft), or Inch (in).

**The selected unit is used for Measure, Offset, the coordinate table, the X/Y readout, and the point details window.*



After preparing the points, continue to 13 Layout.

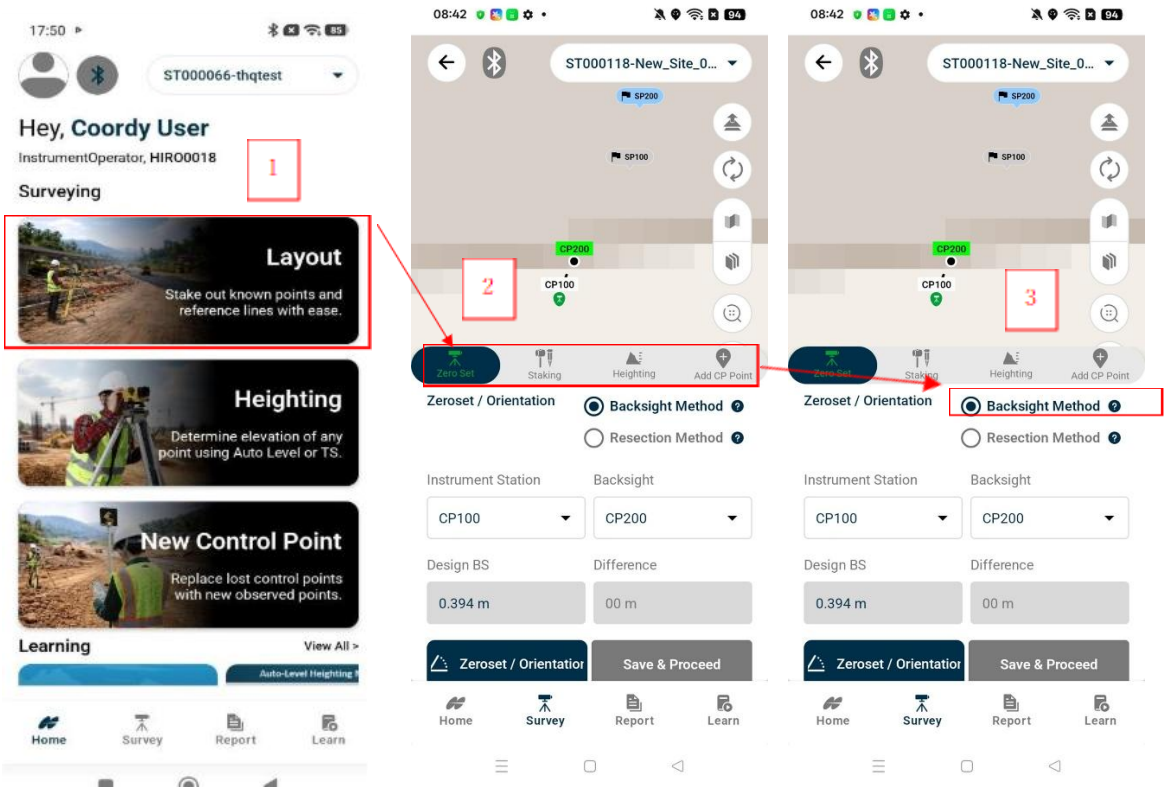
13. Layout

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

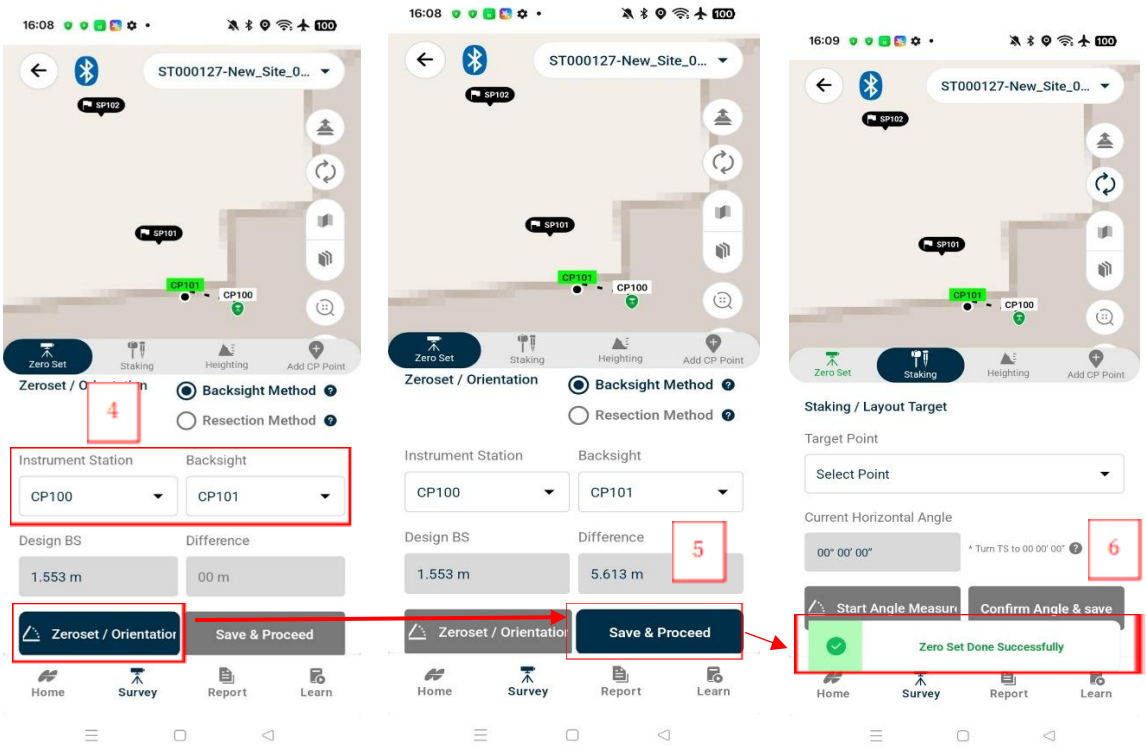
1. You can start the Layout operation from “Layout.”
2. The Layout function is selected from the 4 icons below.
   Zeroset / Orientation, Staking, Heighting and Add CP Point.
   You can select two setup methods, “Backsight Method” and “Resection Method”.
3. You select “Backsight Method” first, perform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



Select the instrument point and backsight point from CP.

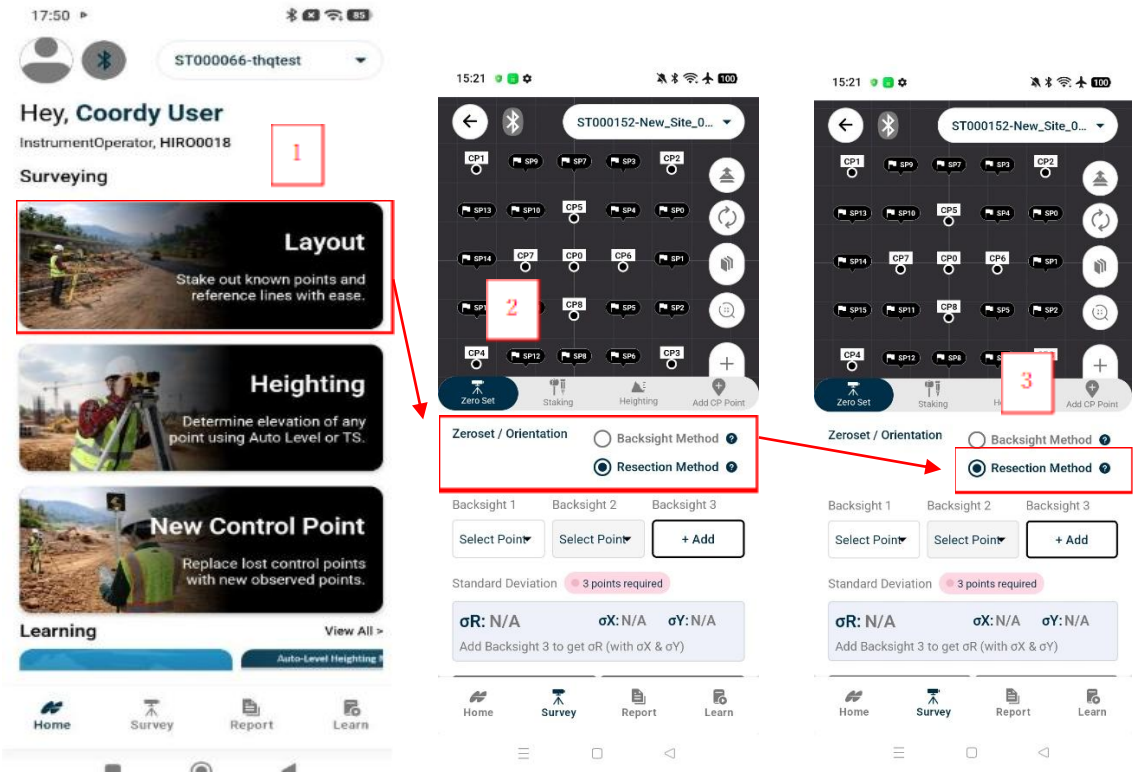
Sight the backsight point and tap “Zeroset / Orientation”.

4. The app sends the 0 Set command to the TS, and the horizontal angle is set to 0°00'00". Tap “Save & Proceed”.
5. When the “0 Set Successful” message appears, the setup is complete.

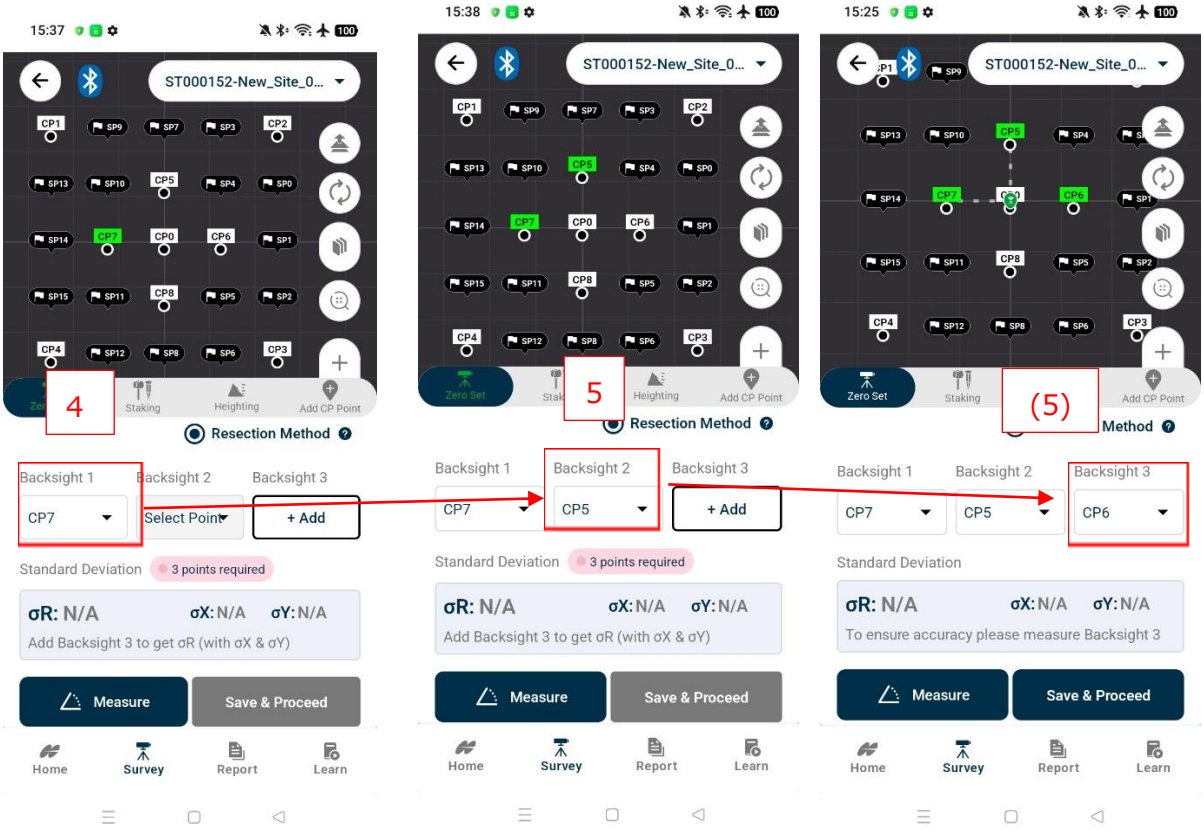


IS-02: Resection Method

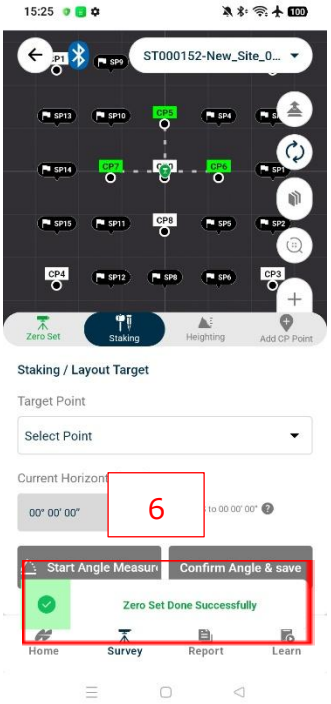
1. You can start the Layout operation from “Layout.”
2. The Layout function is selected from the 4 icons below.
   Zeroset / Orientation, Staking, Heighting and Add CP Point.
   You can select two setup methods, “Backsight Method” and “Resection Method”.
3. You select “Resection Method” first, select two registered CP and measure them one by one using “Measure”.



4. Select 1st registered CP and tap “measure” for measurement.
5. Select 2nd registered CP and tap “measure” for measurement. Then Save & Proceed. (If needed, tap "+Add" to add a 3rd backsight point (optional) and measure it in the same way.)

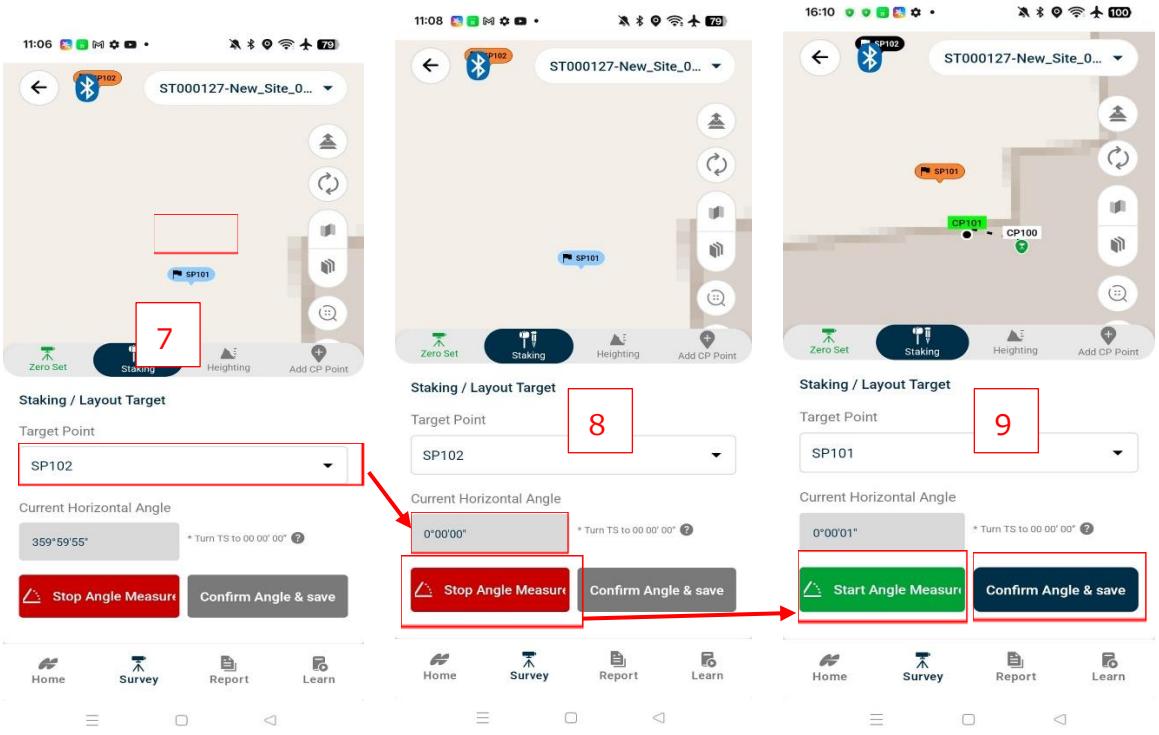


6. After measuring the 2nd CP, the instrument position is calculated automatically. The Zero Set is also completed automatically at the same time.

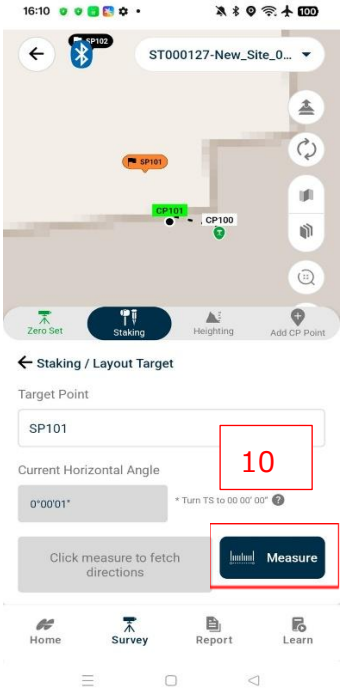


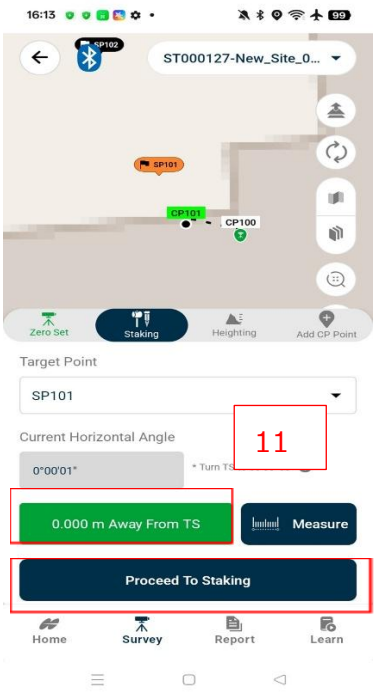
(Steps 7 onwards are common to both IS-01 and IS-02.)

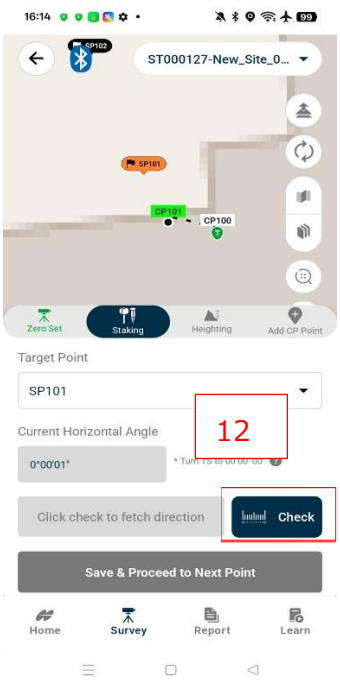
7. Select an SP by tapping the point name on the screen or from the point list.
8. The app automatically calculates the horizontal angle to the selected SP.
   Rotate the TS until the displayed angle becomes 0°00'00".
9. Tap “Confirm Angle & save” to fix the angle, then guide the Rodman to the SP.

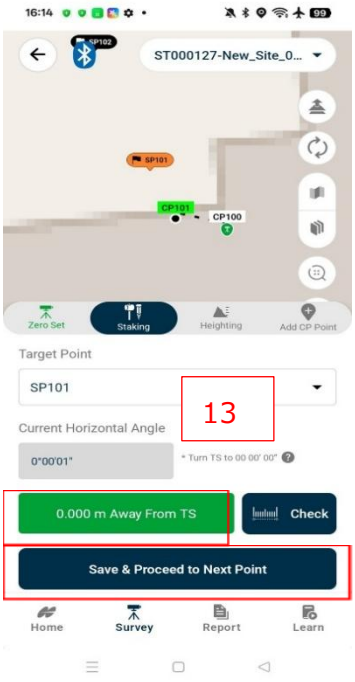


10. Tap “Measure”, guide the Rodman forward and backward according to the on-screen instructions.
11. The Layout point is reached when the forward/backward offset becomes 0.000 m, positioning is complete. Tap “Proceed to Staking,” then instruct the Rodman to stake.
12. After the staking is done, tap “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.
    When TS heighting is enabled, the height (Z) is also saved with the stakeout result (X, Y, Z).



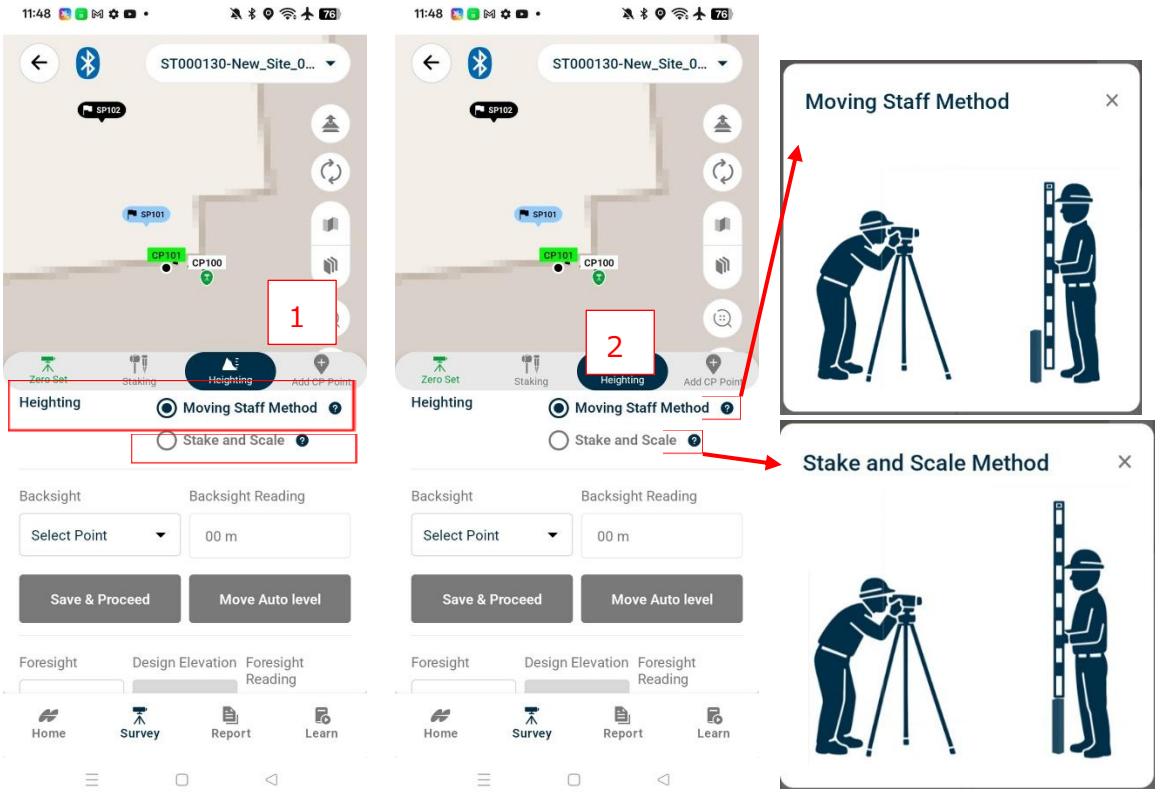




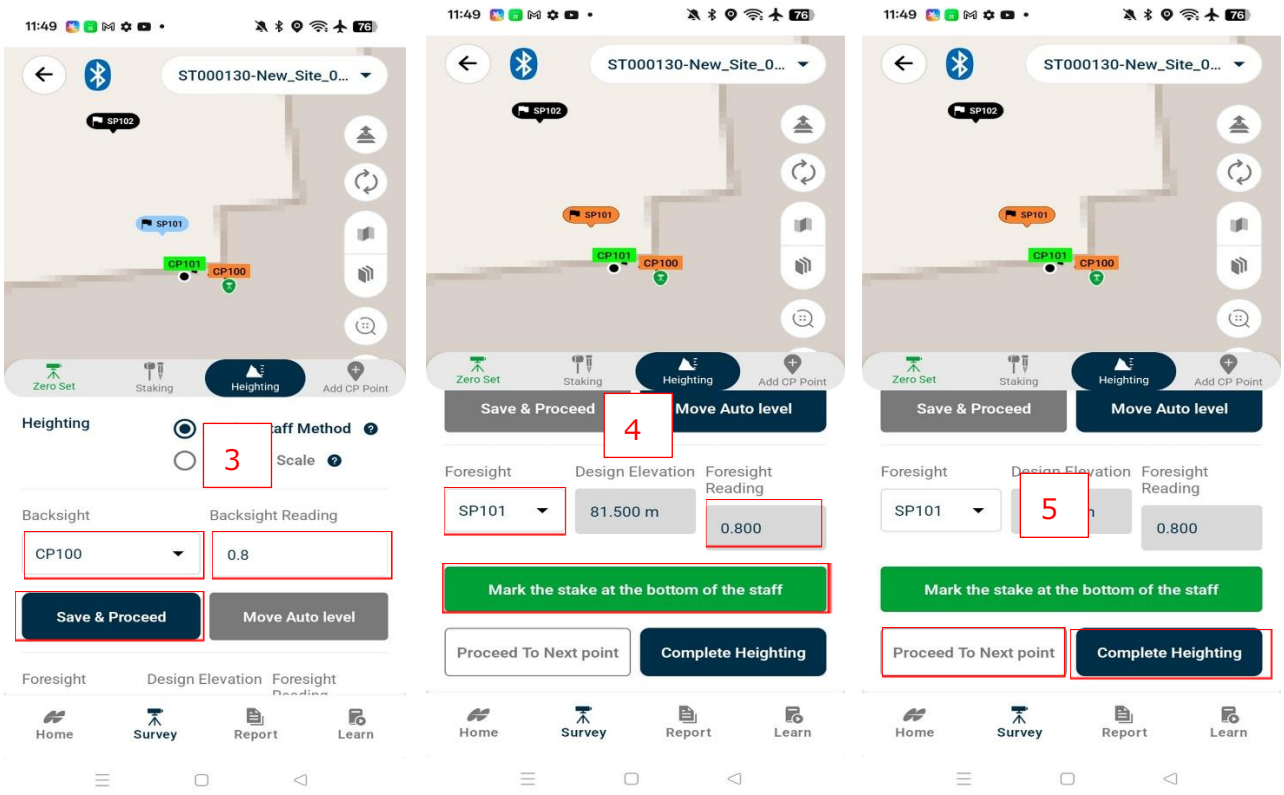


HS-01: Moving Staff Method

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.

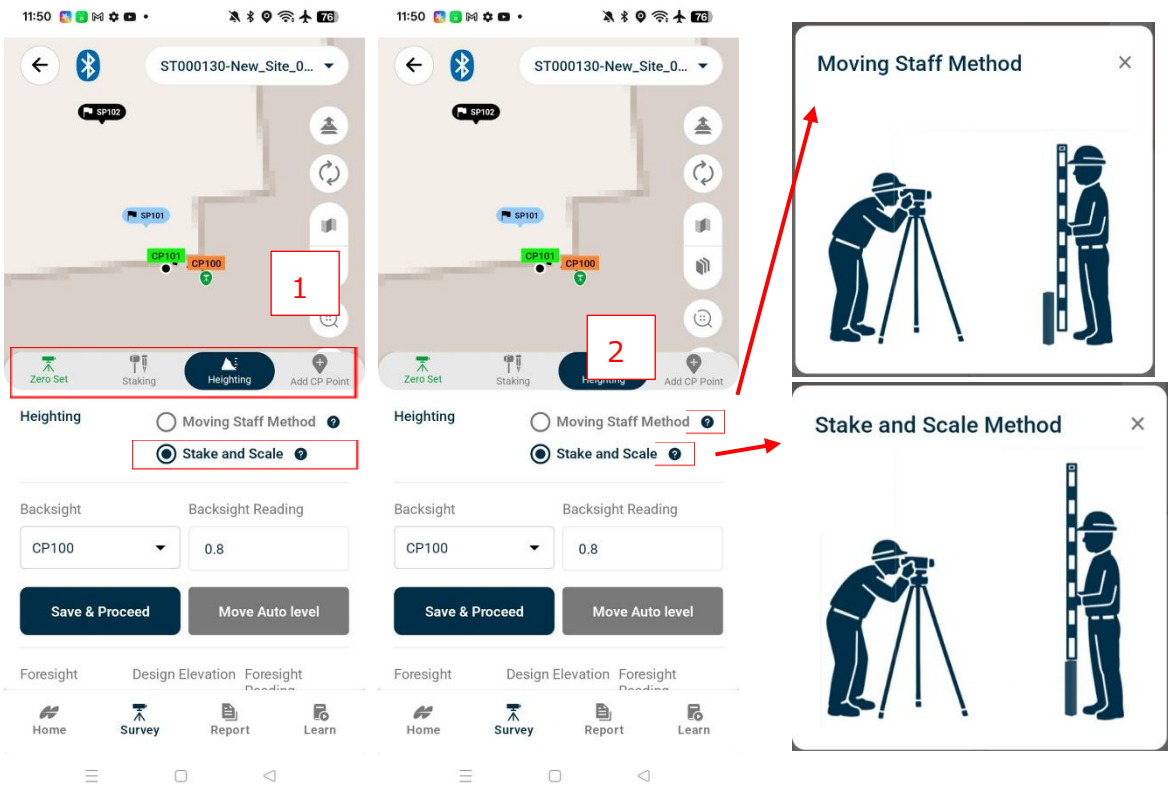


3. Select the Backsight point from the dropdown and enter the reading value.
   After entering the value, tap “Save & Proceed.”
4. In the Moving Staff Method, selecting a Foresight point from the dropdown will display how far below the stake head you should mark.
5. After marking is complete, tap “Complete 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.

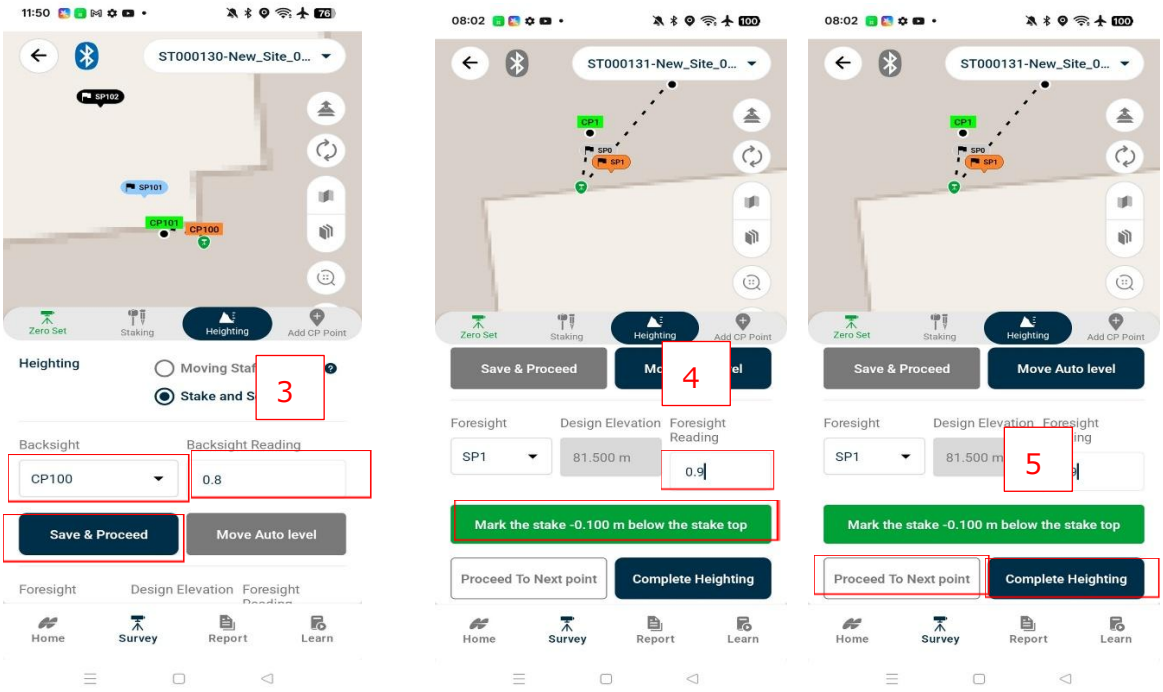


HS-02: Stake and Scale Method

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.
   The app then displays 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.

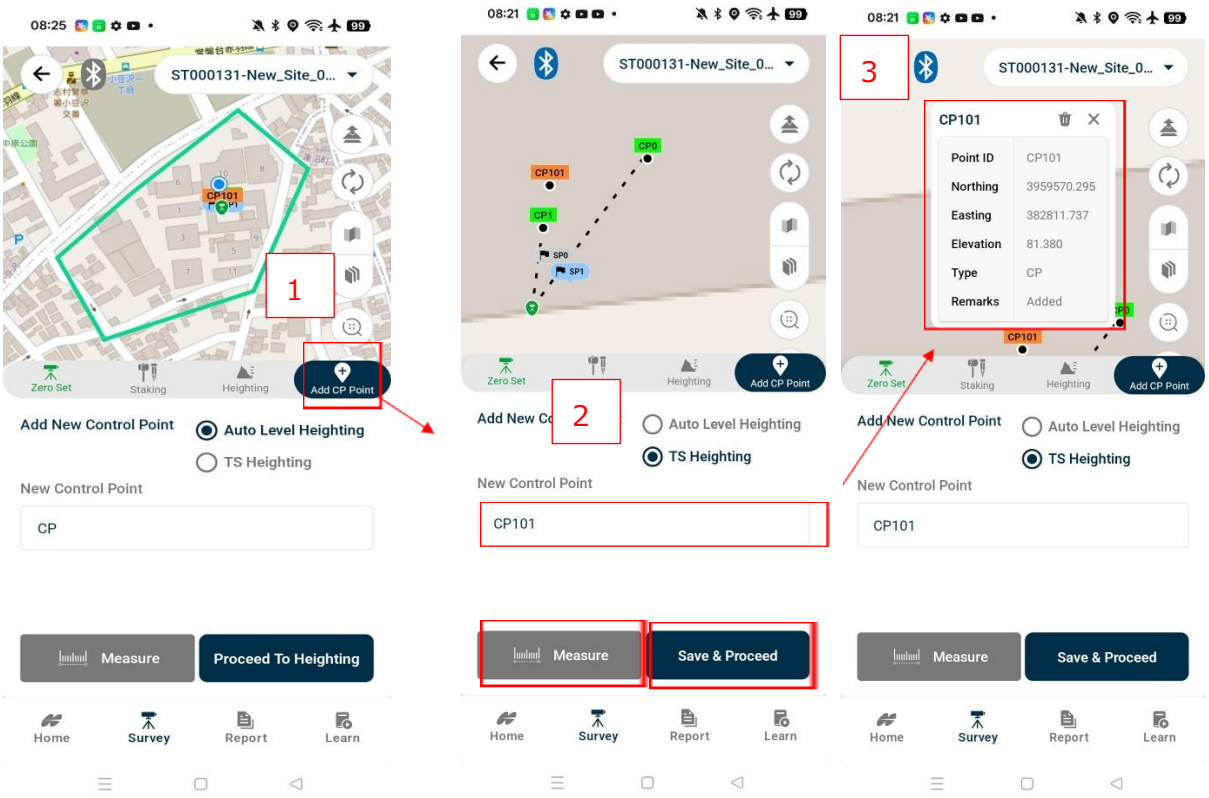


14. New Control Point

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

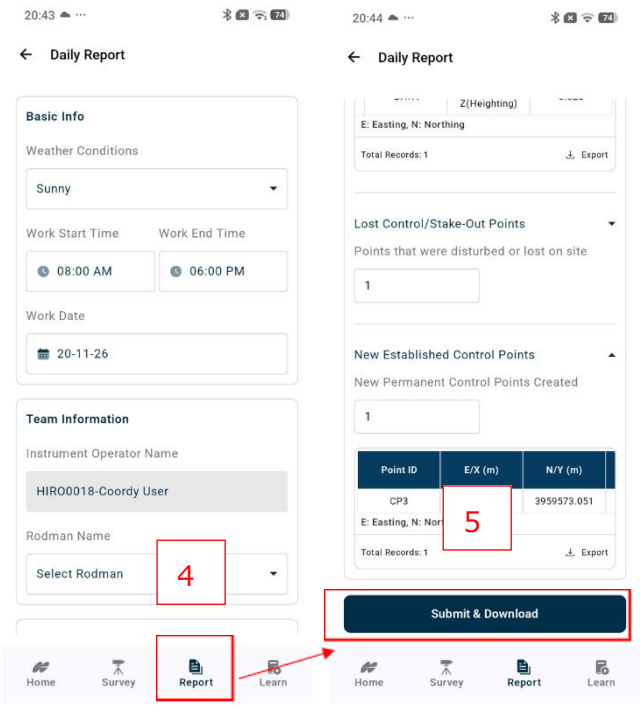
2.To obtain height using the Total Station, enter the new control point name and tap “Measure.”
The system will perform the measurement and capture the coordinates.
If using an auto level, perform the Total Station measurement first, then follow Steps HS-01/02-5.

3.Tap a point on the map to view its coordinates. Tap the trash icon to delete the point.
Tap “Save and Proceed”. The new CP is recorded 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.



Data is synced automatically when the device is connected to the network.

15. Customer support “AI-Chatbot”

The CoordyNavi agent is an AI-powered chat assistant that answers your everyday questions about CoordyNavi.

1. Tap the profile icon on the Home screen, then tap “Help & Support”.
2. Tap “Chat with us”. The Topcon CoordyNavi website opens.
3. Tap the AI Chatbot icon in the bottom-left corner of the page.
4. Type your question in the chat window.

