

YOUR CONSTRUCTION TECHNOLOGY PROVIDER



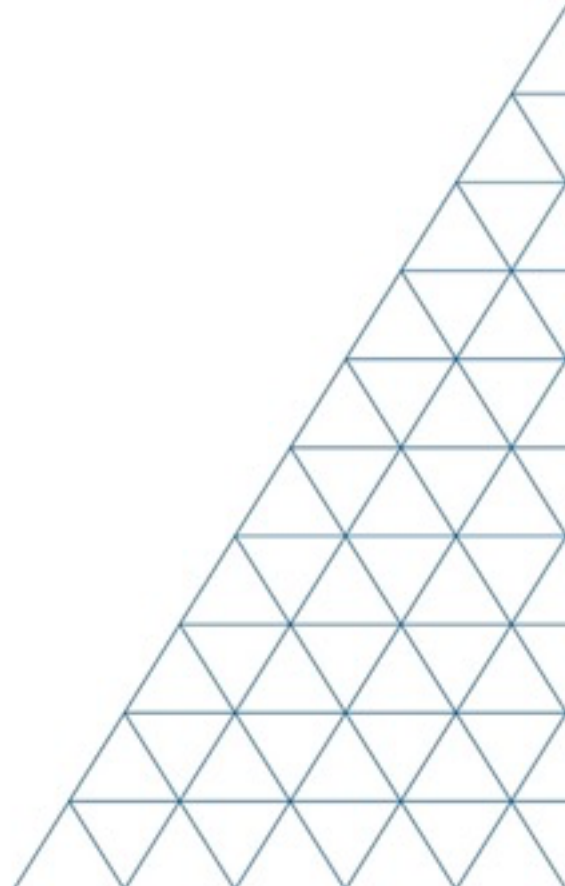
# Field Reference Guides

SITWORKS UTS VERSION 1.43

SITECH SOUTHWEST  

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SITECHSW.COM





# Field Reference Guide

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**TRAINING CHECKLIST**

## Siteworks UTS

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### Training Checklist

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**Training Acknowledgement:**

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Customer Signature

Date

SITECH Representative

Date



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**TRAINING CHECKLIST**

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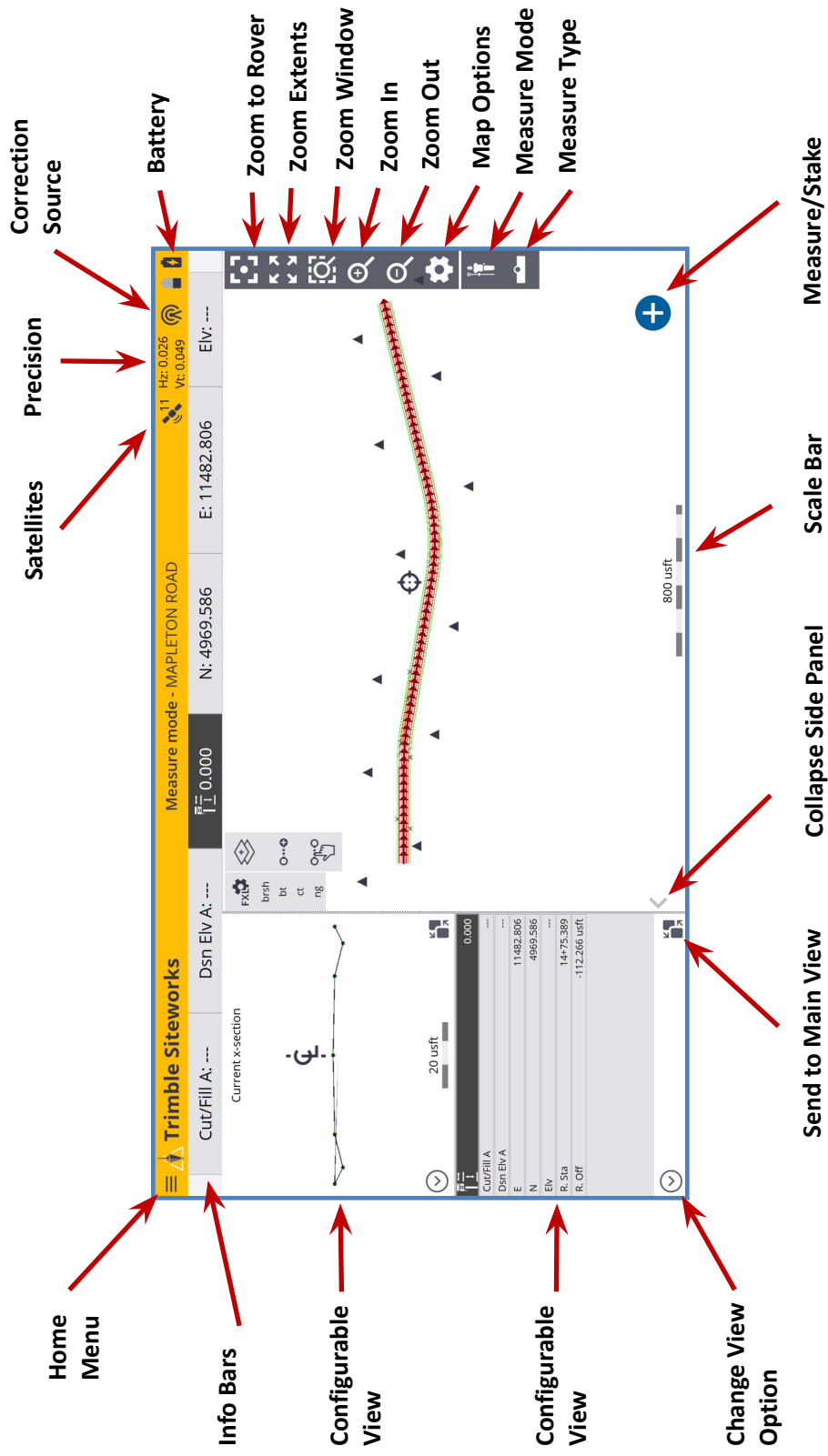
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# Main Screen Layout










## Create a New Site and Work Order

1. **Power On** TSC7 Data Collector
2. Press **“Trimble Siteworks”** 
3. Select **“⊕”** and **Enter Project Name** in the Project pull down menu
4. Select the desired units for **“Distance” “Angles” “Coordinate Order” “Grid coordinate” “Azimuth” “Stationing”** and press **“Next”**
5. If a project map is available on the collector check the checkbox and **“tap to select file”**
6. If a calibration file is available on the collector check the checkbox and **“tap to select file”**
7. If a control point file is available on the collector check the checkbox and **“tap to select file”**
8. If a FXL file is available on the collector check the checkbox and **“tap to select file”**
9. To define a coordinate system check the checkbox and select the desired coordinate system
  - If a site calibration is to be performed do not select a Coordinate System.
10. Press **“Finish”**
11. Select **“⊕”** to add a new **Work Order**
12. Enter **Work Order Name** and add instructions (optional) and press **“Finish”**
13. Select **“(No design needed)”** if no design files are on the collector.
  - Select **“⊕”** if design files are on the collector. Name the design; check the checkbox for the design components you wish to include and **“tap to select file”** press **“Finish”**
14. Press **“Accept”**




## Create New Design from Hard Disk / USB

1. **Power On** TSC7 Data Collector
2. Press **“Trimble Siteworks”** 
3. Select **“Project”** and **“Work Order”**
4. Select **“”** to add **New Design**
5. Plug Hard disk into USB port
  - o **Note: Android Devices will prompt the user to establish permission for Siteworks to “Allow Access” and “Use this Folder” when importing from or exporting to a USB stick for the first time on the device.**
6. Enter the Design Name
7. Check the box next to Select design file
8. Tap in the Box to Browse to the location on the USB that holds the design surface file
9. Highlight then tap **“Accept”**
10. Check the box next to Select design linework
11. Tap in the box to Browse to the location on the Hard Disk that holds the design map file
12. Highlight then tap **“Accept”**
13. Check the box next to Select stakeout points
14. Tap in the box to Browse to the location on the Hard Disk that holds the stakeout point file
15. Highlight then tap **“Accept”**
16. Press **“Finish”**
17. Press **“Accept”**

## Configure Information Bar / Panel


1. From the main Trimble Siteworks screen press 
2. Press “**Settings**”
3. Press “**Info Bar/Panel**”
4. Information Bar: Check the following boxes:
  - **Cut/Fill A**
  - **Design elevation A**
  - **Antenna/ Target height**
  - **Northing**
  - **Easting**
  - **Elevation**
5. Press - hold and Drag “  ” to match order above
6. Press Information Panel at the top of the screen: Check the following boxes.
  - **Cut/Fill A –**
  - **Design elevation A**
  - **Antenna/ Target height**
  - **Northing**
  - **Easting**
  - **Elevation**
  - **Reference Station**
  - **Reference Offset**
7. Press - hold and Drag “  ” to match order above
8. Press “**Accept**”

## Connect SPSX30

1. **Power On** Data Collector
2. Press **“Trimble Siteworks”** 
3. Select **“Project, Work Order and Design”** press **“Accept”**
4. Press 
5. Press **“Project Setup”** then select **“Connect Device”**
6. Press 
7. Brand select **“Trimble”**
8. Model Select **“SPS Series”** hit select
9. Connection type select **“Radio”**
10. Select the Radio Channel that is set on the instrument from the drop down
11. Select the Network ID that is set on the instrument from the drop down
12. Press **“CONNECT”** then Press **“ACCEPT”**
13. Ensure that the instrument is leveled within the project tolerances in both Sighting and Trunnion
14. Ensure that the Compensator Status is set to **“Enabled”** and press **“Accept”**
15. Select **“Read pressure from instrument”**
16. Enter in the temperature for the day
17. Ensure that **“Show correction on startup”** is selected
18. Press **“Accept”**



## Setup SPSX30 Arbitrary Location

1. From the Main Siteworks Screen 
2. Press “**Project Setup**” then select “**Total Station Setup**”
3. Select “**Set up at an arbitrary location**”
4. Press “**Accept**”
5. Press “**Add Point**”
6. Select a point to be measured
  - Tap on the screen
  - Select from a list
  - Press ACCEPT
7. Press “**Select**”
8. Measurement mode select “**Averaging**”
9. Enter the **Target Height**
10. Target type Select your target (Example utilizes **MultiTrack Target**)
  - Track select “**Active**”
  - RMT ID set to the same as the MultiTrack Target
  - Press “**Accept**”
  - Press “**OK**”
11. Measurement sets enter “**1**”




## Cont: Setup SPSX30 Arbitrary Location

12. Set both the Angle and Distance tolerance to project tolerances
13. Select “**Use Autolock**”
14. Level the Target over the select control point
15. Ensure the instrument is locked onto the target by point the instrument towards the target
16. Press “**Measure**”
17. Review the Averaged measurements and Standard deviation to ensure they are within tolerance
18. Press “**Accept**”
19. Two or more measured points are required to compute instrument location
20. Repeat steps 5-23 for the next control points
21. Review the Setup error to ensure the setup is within project tolerance
22. Press “**Accept**”
23. “**Do you want to save the instrument point as a control point for future use?**”
24. Press “**No**”



## Setup SPSX30 Known Control Point

1. From the main screen in Siteworks press 
2. Press **“Project Setup”** then press **“Connect Device”** then press **“Total Station”**
3. Select **“Set up on a Known control point”** and press **“Accept”**
4. Select the point the instrument is set up on
  - Tap on the screen or Select from a list
  - Press ACCEPT
5. Press **“Accept”**
6. Measurement method select **“Slope Height”**
7. Enter the distance from the control point to the notch on the total station
8. Press **“Accept”**
9. Press **“Add point”**
10. Select a point to backsight
  - Tap on the screen
  - Select from a list
  - Press **“ACCEPT”**
11. Press **“Select”**
12. Ensure that the **“Angle only”** box is unchecked
13. Measurement mode select **“Averaging”**




## Cont: Setup SPSX30 Known Control Point


14. Enter the height of the target
15. Target type Select your Target (Example utilizes **MultiTrack**)
  - Track select active
  - RMT ID set to the same as the MultiTrack Target is set to
  - Press “**Accept**”
  - Press “**OK**”
16. Measurement sets enter “1”
17. Set both the Angle and Distance tolerance to project tolerances
18. Select “**Use Auto Lock**”
19. Level the Target over the select control point
20. Ensure the Instrument is locked onto the target by point the instrument towards the target
21. Press “**Measure**”
22. Review the Averaged measurements and Standard deviation to ensure they are within tolerance
23. Press “**Accept**”
24. Review the Setup error to ensure the setup is within project tolerance
25. Press “**Accept**”



## SPSX30 Read Setup from Instrument

1. From the main Siteworks Screen press 
2. Press **“Project Setup”** then select **“Total Station Setup”**
3. Select **“Read station setup data from instrument”**
4. Press **“Accept”**
5. Press **“OK”**

## Recheck Setup SPSX30


1. From the main Siteworks screen press 
2. Press “**Project Setup**”
3. Press “**Recheck System**”
4. Select a point to be measured
  - Tap on the screen or Select from a list
  - Press ACCEPT
5. Press “**Select**”
6. “**Angle only**” should be unchecked
7. Measurement mode select “**Averaging**”
8. Enter the target height
9. Target type Select your Target (Example Utilizes **MultiTrack**)
  - Track select active
  - RMT ID set to the same as the MultiTrack Target is set to
  - Press “Accept”
  - Press “OK”
10. Measurement sets enter “**1**”
11. Set both the Angle and Distance tolerance to project tolerances
12. Select “**Use Autolock**”

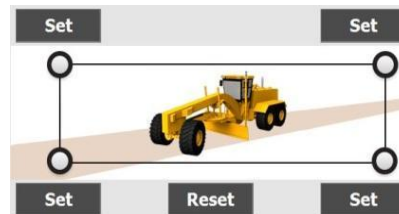


## Cont. Recheck Setup SPSX30







13. Level the Target over the select control point
14. Ensure the instrument is locked onto the target by point the instrument towards the target
15. Press "**Next**"
16. Review the Averaged measurements and Standard deviation to ensure they are within tolerance
17. Press "**Accept**"
18. Review the Check Control Point Results to ensure all measurements are within project tolerance
19. Press "**Accept**"

## Machine Control Setup

1. Press 
2. Press **“Project Setup”**
3. Press **“Machine Control Setup”**
4. Point the instrument to the beginning of the grading area towards the ground
5. Press **“Set”** either the lower left or right side of the box
6. Point the instrument to the end of the grading area above the height of the machine control target
7. Press **“Set”**
8. Press **“Next”**
9. Press **“Add”**
10. Enter the Machine Name
11. Set the Radio channel to match what is set in the machine
12. Press **“FINISH”**
13. Set the Network ID to match what is set in the machine and press **“Next”**
14. Press **“Finish”**



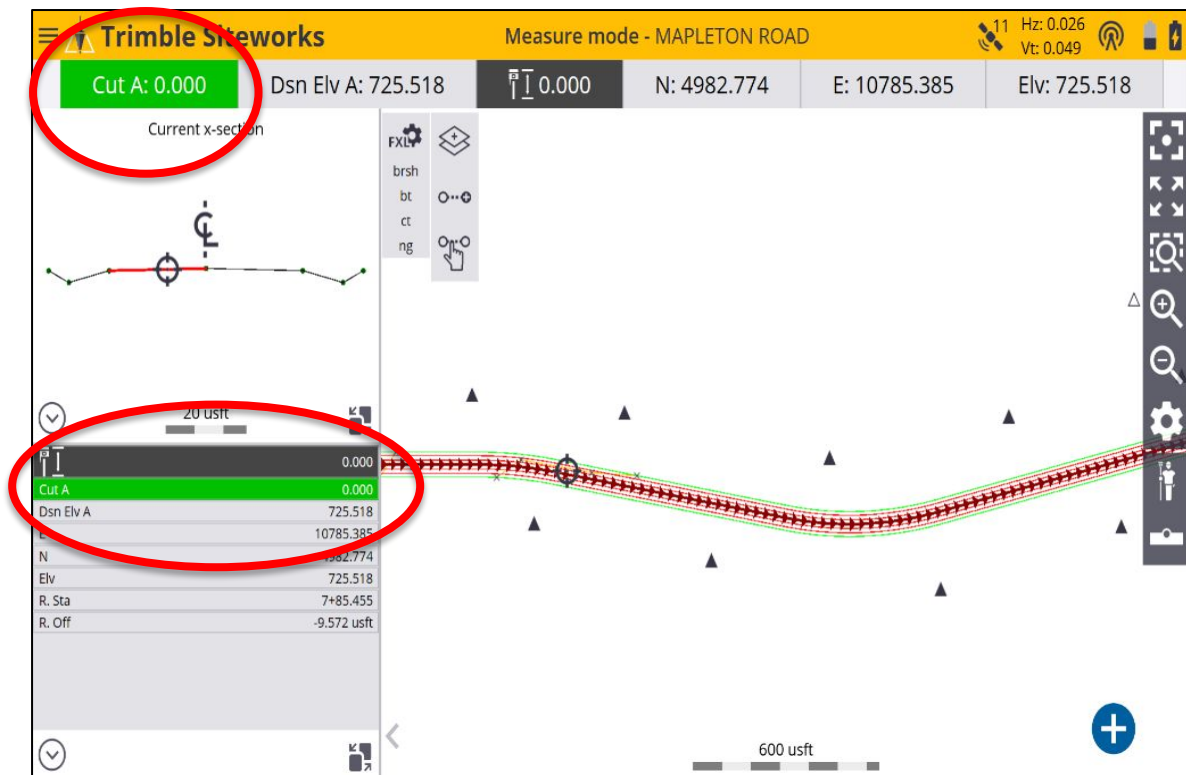
## Measure Control Point SPSX30

1. Press 
2. Press **“Measure”**
3. Press **“Measure Control Point”** then **“New Control Points”** 
4. Press  from the main screen
5. Press 
6. Enter the target height
7. Target type Select your Target (Example Utilizes **MultiTrack**)
  - Track select active
  - RMT ID set to the same as the MultiTrack Target is set to
  - Press **“Accept”**
  - Press **“OK”**
8. Measurement sets enter **“1”**
9. Set both the Angle and Distance tolerance to project tolerances
10. Select **“Use Autolock”** Press **“Accept”**
11. Level the Target over the select control point
12. Ensure the instrument is locked onto the target by point the instrument towards the target
13. Press 
14. Enter Point Name and Point Code
15. Press **“Accept”**
16. Review the Averaged measurements and Standard deviation to ensure they are within tolerance
17. Press **“ Accept”**

## Check Grade





1. Connect to your device and load the design you would like to utilize to check grade.
  - Refer to previous reference guides for instructions
2. Plumb the rod over the spot in which you would like to check grade.
  - Must be within a roadway or site model to calculate Cut/Fill Values
3. Cut/Fill information will be located on the top left hand corner on the info bar or on the info panel

NOTE: To add Light Bar to side panel select  on either side panel then select **“Lightbar”**

















## Measure Point: Standing

1. From the main Trimble Siteworks screen press 
2. Press **“Measure”**
3. To select measurement method press  from the main screen
4. Press **“Standing”** 
5. Select if a Quick release is being used
6. Enter the Target height and press **“Accept”**
7. Navigate to the location you would like to measure and plumb the rod
8. Press  to measure a new point
9. Define Point name (it is recommended to allow the system to name the point)
10. Define Point code
11. Select point type
  - Surface point is intended to be a point that will help define a surface
  - Feature is intended to be a point that defines a feature on your project
12. Define if you would like the dialog box to Show every time
13. Press **“Accept”**







## Measure Point: Walking Distance

1. From the main Trimble Siteworks screen press 
2. Press **“Measure”**
3. To select measurement method press  from the main screen
4. Press **“Walking”** 
5. Select if a Quick release is being used
6. Enter the target height: Height should be height of rod + distance held off the ground
7. Record Mode **“Fixed Distance”**
8. Enter Horizontal Interval at which you would like the points recorded
9. Enter Vertical change at which you would like additional points recorded and press **“Accept”**
10. Navigate to the location you would like to start measuring and plumb the rod and press 
11. Define Point name (it is recommended to allow the system to name the point)
12. Define Point code
13. Select point type
  - Surface point is intended to be a point that will help define a surface
  - Feature is intended to be a point that defines a feature on your project
14. Show every time **“No”** and Press **“Accept”**
15. Walk the desired route in which you would like to collect points.
16. Press the  to add a point in-between automatic shots
17. Press **“Stop”** when finished 

## Measure Point: Walking Time







1. From the main Trimble Siteworks screen press 
2. Press **“Measure”**
3. To select measurement method press  from the main screen
4. Press **“Walking”** 
5. Select if a Quick release is being used
6. Enter the target height: Height should be height of rod + distance held off the ground
7. Record Mode **“Fixed Time”**
8. Enter the time interval at which you would like the points to record and Press **“Accept”**
9. Navigate to the location you would like to start measuring and plumb the rod and Press 
10. Define Point name (it is recommended to allow the system to name the point)
11. Define Point code
12. Select point type
  - Surface point is intended to be a point that will help define a surface
  - Feature is intended to be a point that defines a feature on your project
13. Show every time **“No”** and Press **“Accept”**
14. Walk the desired route in which you would like to collect points.
15. Press the  to add a point in-between automatic shots
16. Press **“Stop”** when finished 

## Measure Point: Vehicle Distance








1. From the main Trimble Siteworks screen Press 
2. Press **“Measure”**
3. To select measurement method press  from the main screen
4. Press **“Vehicle”** 
5. Select if a Quick release is being used
6. Enter the target height: Height should be the distance from the ground to bottom of antenna or bottom of quick release
7. Record Method **“Fixed Distance”**
8. Enter Horizontal Interval at which you would like the points recorded
9. Enter Vertical change at which you would like additional points recorded and Press **“Accept”**
10. Press **“OK”** to the warning after reading
11. Navigate to the location you would like to start measuring and Press 
12. Define Point name (it is recommended to allow the system to name the point)
13. Define Point code
14. Select point type
  - Surface point is intended to be a point that will help define a surface
  - Feature is intended to be a point that defines a feature on your project
15. Show every time **“No”** and Press **“Accept”**
16. Drive the desired route in which you would like to collect points.
17. Press the  to add a point in-between automatic shots
18. Press **“Stop”** when finished 

# Field Reference Guides




## Measure Point: Vehicle Time

1. From the main Trimble Siteworks screen press 
2. Press **“Measure”**
3. To select measurement method press  from the main screen
4. Press **“Vehicle”** 
5. Select if a Quick release is being used
6. Enter the target height: Height should be the distance from the ground to bottom of antenna or bottom of quick release
7. Record Mode **“Fixed Time”**
8. Enter the time interval at which you would like the points to record and press **“Accept”**
9. Press **“OK”** to the warning after reading
10. Navigate to the location you would like to start measuring and press 
11. Define Point name (it is recommended to allow the system to name the point)
12. Define Point code
13. Select point type
  - Surface point is intended to be a point that will help define a surface
  - Feature is intended to be a point that defines a feature on your project
14. Show every time **“No”** and press **“Accept”**
15. Drive the desired route in which you would like to collect points.
16. Press the  to add a point in-between automatic shots
17. Press **“Stop”** when finished 


## Stakeout Point

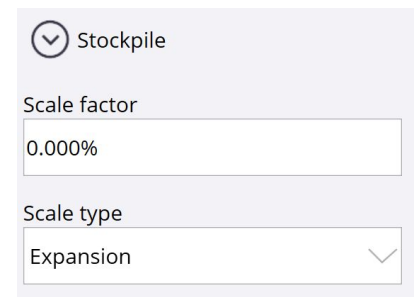
1. From the main Trimble Siteworks screen press 
2. Press “**Stake**”
3. Select the point to stake by either
  - Pressing the point on the screen
  - Selecting the list icon and selecting it from the list 
4. Press “**Accept**”
5. If first time staking a point, set the **Stakeout Settings** by pressing  then “**Settings**” then “**Stakeout**”
  - Horizontal tolerance: Set to project tolerance “**.082’ or 0.025m**” (default)
  - Stake marking method: select from drop down “**Ground Surface**” (default)
    - For more information, press 
  - Working stake length: Length of stake above ground
    - For more information, select press 
    - Cut/Fill interval: Set to round number “**0.50usft or .150m**” recommended
    - Min bottom and top stake spacing: Set to round number “**0.50 usft or 0.150 m**”
6. Press “**Accept**”
7. Navigate to the point in which you have selected to stake
8. Once you are within the projects horizontal tolerances plumb the rod and press 
9. Review the Stake Report and press “**Accept**” to accept or  to reshoot the point
10. If “**Accept**” is press the point will be stored

## Measure and Compute Stockpile Volume

1. Open the Site, and create a new work order
2. Connect to the rover
3. Start the stockpile topo by shooting the base of the pile
4. Mark the start location of the stock pile base topo
5. Set Measure type to 'New Line' Line Type to 'Volume Boundary'
6. Plumb the rod, press  to record the points along the oe line
7. Show every time "**Yes**" and press "**Accept**"
8. Walk the perimeter of the pile recording a point every 10'-15' or 3-5m repeating **steps 6 and 7** until you are back near the starting point.
9. Change Measure Type to Point
  - Change the Point code to "**Top**"
  - Point Type to Surface
10. Measure points on the top of the pile by pressing the Button 
11. After all points defining the top are measured press 
12. Press "**COGO**"
13. Press "**Review & Edit Data**"

## Cont. Measure and Compute Stockpile Volume

14. Press 
15. Select the **Boundary** created in **step 8**
16. Press the top **Drop down caret** and select Stockpile.
17. Add Expansion or Shrinkage by selecting the **drop down caret** under Scale Type
18. Enter the percentage of Expansion or Shrinkage under **Scale Factor**
19. Press "**Accept**"
20. Volume Calculations will be displayed
21. Save Volume Calculations enter **Description** and press "**Accept**"

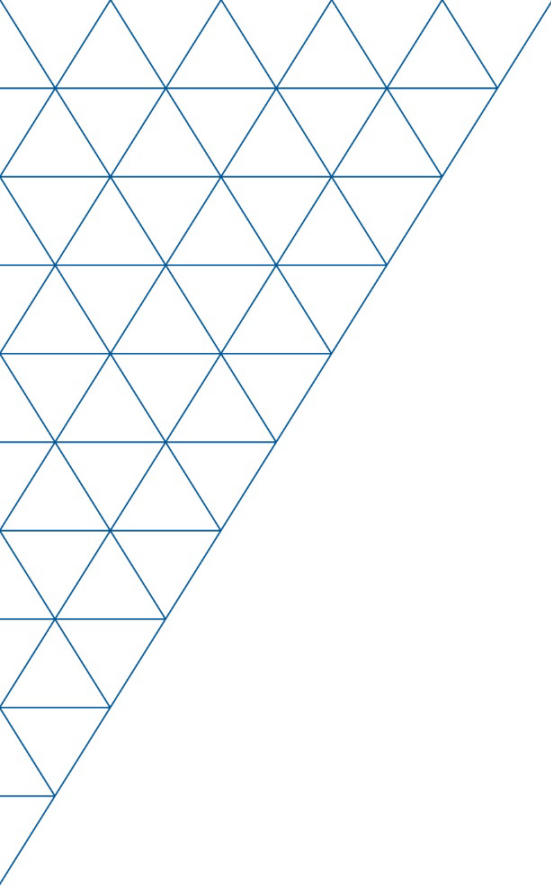


Stockpile

Scale factor  
0.000%

Scale type  
Expansion





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