

Buffer & Stakeout

Help Document

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Overview

The **Buffer & Stakeout** application software will let you digitize **Point Features**, **Line Features** and **Area Features** and create one or more Buffer zones around the selected geographic Feature. You will be able to digitize sub-areas within any Area Feature or buffer zone.

You can use the **Point Stakeout** function to help you approach the Point Features well as the nodes on a Line Feature, an Area Feature or a Buffer zone. And you can use the **Line Stakeout** function to guide you along a Line Feature or the boundary of an Area Feature or buffer zone.

You will be able to view the area and perimeter of a selected region. You may be interested in the acreage of that region because you could get a tax credit for not planting within that region. You may need to know the length of the boundary because you plan to build fences around that region.

A drawing will be automatically created on the screen for the digitized Feature and each segment can be labeled with distance and direction. The Feature could be displayed over a Map when the latter is available.

If your iOS device has **GPS** capability, you could pick the GPS position as a node for the Line or Area Feature that you are digitizing. Make sure the **Location Service** under your device's **Privacy Setting** is turned on for the

Buffer & Stakeout application software.

When you start this application, you will see a number of tool icons displayed across the top of the screen. Other tool icons may be displayed on various screens, depending on the function being used.



Main Menu (pull-down list)







Tap the Main Menu icon to display the list of functions on the Main Menu:

Job
Export to PDF
Export to DXF
Map
Email Files
Setup
Help
About Buffer & Stakeout



Tools Menu (pull-down list)

Tap on the inverted arrowhead to show the following tools:

-  **Add Point manually**
-  **Add Line manually**
-  **Add Area manually**
-  **Add Point by Coordinates**
-  **Delete Feature**
-  **Move Node**



Utilities (Create Buffer shown initially)



Measure Distance



Measure Area



GPS Tools

GPS On/Off
Position Info

Point Stakeout Line Stakeout




Zoom-Fit



Feature Properties


On-screen Keyboard


An on-screen keyboard will automatically pop up when the focus is on a data entry field, such as the **Buffer Interval**. After entering data, tap the **Return** button on the pop-up keyboard. If a Next button is displayed, then tap that button to hide the keyboard.

When entering numeric data, you will notice that there is a special separator key  showing several symbols on it. To enter a distance value with a fractional part, tap this key to put in the decimal point.

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Open a Job File

Tap the **Main Menu** icon , select **Job** then select **Open**. Your current job file name is displayed. You may select any other existing job file to open, such as **example1.pmp**.

To create a new job file, enter a new file name, then tap the green check mark  .

(Yes, it's okay to type over the displayed file name.)

If you open a new job while working with an existing job, the existing job will automatically be saved and closed.

To cancel out of the screen for opening a file, simply tap the red cross mark



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Setup

Before the first-time use, please select the distance and angle units to be used. You may also specify how the Feature labels should be displayed.

Unit and Angle System

Select the **Unit and Angle System** under **Main Menu - Setup** to specify the desired length unit for displaying line segments. The areas will be computed in the metric or British system accordingly.

Available choices for displaying angles are **Azimuth** and **Bearing**. If Azimuth is chosen, also specify the **Angle System**: North or South. Angles will be displayed in Degrees, Minutes and Seconds (DMS).

Feature Labels

This app gives you the option of labeling the line segments, areas and corner angles for the selected Feature when feasible.

You can define the font color and size for the labels after selecting **Feature Labels** under **Main Menu - Setup**.

Mark the **Show white background** checkbox if you wish to have the labels displayed on a white background to make them stand out better over a satellite map.


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Display Map

Whenever you are connected to the Internet and your location can be determined, Map can be displayed as

the background map for your job data.

You may select one of the following view modes after tapping the **Main**

Menu icon  then choosing **Map**:

Show Standard - Show a map of streets and landmarks.


Show Satellite - Show satellite photos.

Show Hybrid - Show street names on satellite photos.

To turn off the Map display, tap **Close Map** on the Map menu.

Where am I?

When you start a new job, the app does not know where you are. If you have the Map turned on, you can find your continent then zoom in to your country, your city, hence your neighborhood. You may zoom into or zoom out of portions of the graphical view by using your fingers to pull or pinch on the display, respectively.

If your device is equipped with GPS or has Location Service, then you can tap the **Main Menu** icon  and select **GPS ON** to turn on GPS. This will permit the app to immediately zoom to your location.

To nail down your location, you will need to digitize at least one node. If you open the job named “**mybuffers.pmp**”, you will see that a node has been added to the map. Go ahead and turn on Map in the **Show Satellite** mode so you will see that the point is located on the bank of a river.


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Adding Features



You may digitize Features by tapping

on the screen to drop a node for a Point, a Line or an Area Feature. For example, if you wish to make a triangular shape, call up the "Add Area manually" function then tap the screen at its three corners.

If you find that tapping on the screen produces no effect, look at the **Add**

Node icon . When this icon is not lit, the digitization process is halted to return the touch screen to its normal operation mode. Tap this icon again to make it active before digitizing on the screen. Turn this icon off before using gestures to zoom or pan the screen. This way you won't inadvertently add extraneous nodes.

If your device has GPS capability, you could use the GPS position as a node for the Feature that you are digitizing.

To do so, tap on  to turn on GPS then tap the **Pick GPS** icon  to add such a node.

To fit the drawing to the screen,


simply tap the **Zoom-Fit** icon .

You may wish to zoom into a map to make it easier to place your node more accurately. When **Map** is turned on, you may not be able to zoom to a really small scale. In that case, turn off the Map then pull to zoom into the map.

Adding Points Manually

You can add one or more Point Features to the map by touching the screen.



To add a new Point, first tap on the



Add Point icon . This is one of the tools provided on the **Tools** menu.

Tap on the screen to add a few points.

If you wish to have the Point Feature

snap to a node on the boundary of a Line Feature or an Area Feature, first tap on the little **Down Arrow** icon


then select  **Snap to Node** then tap in the vicinity of the target node. Tap on  again to see the placement of the new Point Feature.

The pull-down menu also provides the  **GPS** icon that you can use to turn on GPS should you wish to add a GPS point by using  **Pick**.

If you added an extra point inadvertently, you can go back to Map View, tap on that point then use the Delete Feature function to delete it.

Adding a Point by Coordinates

If you know the geographic coordinates of a point, you can add the point to the map by entering its coordinates after tapping on the Digitizing Tools Menu then selecting **Add Point by Coordinates**. If the Add

Point by Coordinates icon  is already displayed then simply tap on that icon to display the data input screen.

You may tap on the **Pattern** button to select a different symbol and color for the Point Feature to be created.

Make sure you specify the correct North or South Latitude, and the correct East or West Longitude.

The Orthometric height is the elevation based on mean-sea-level. The ellipsoidal height is based on the ellipsoid.


Digitizing a Line Feature

Suppose we wish to digitize along the water front of the triangular piece of property in the “**mybuffers.pmp**” job.

Please open the mybuffers.pmp job so you may follow along.



Please set the distance unit to **US Survey Feet** and the Angle System to **Bearing**.


A node has been added to this job.

Select the Add Line icon  from the Tools Menu.

Zoom out so you can see the triangular area as shown below.

Make sure the **Add Node** icon  is it.


Tap the Snap to Node icon  then tap on the existing point to start the line. Now tap the Snap to Node icon  to turn it off. Then tap on the screen to make a line segment.


If you missed the intended spot, tap on the **Undo** icon  to erase the line segment and try again.



Tap on the screen to add another node along the river bank.





You may wish to use the **Node Tool** to help you place the node more precisely. To do so, first tap on the donut-shaped **Node tool** icon . A larger donut with crosshairs at its center will be displayed on the map. Touch on the purple area of this tool and drag the crosshairs to the desired location. Then tap once in the donut hole to drop the node. You could also keep holding down on the purple donut and use another finger to touch outside of the donut area to drop the node.

If you wish to erase the entire digitized Line Feature, then tap the **Reset** icon . **Beware that the erased Feature cannot be restored.**

Now, complete the Line Feature as shown below.





Remember to tap on  to turn it off before attempting to pinch or pull the screen to zoom or pan.


You may tap the **Edit** icon  to turn off the data entry fields and see more of the map for digitizing.


Digitizing an Area Feature


In a later part of this document we will take you through an example of digitizing an Area Feature. Following is a general description of this function.

To digitize an Area Feature, first select the Add Area  icon from the Tools menu.


Drop the nodes to delineate the boundary of the Area Feature. Tap the **Add Node**  to toggle it on or off as necessary.

You may use the Node Tool  to help you place the node more precisely.

To use the GPS position as a node for the Line or Area Feature that you are digitizing, simply tap the **Pick GPS** icon  to add such a node.


When the **Snap to Segment** icon  is lit, you may tap on an existing segment to drop a node on that segment.


To quickly include part of an existing Line or an existing Area boundary in the sub-area, tap the **Include**


Boundary icon  then tap the Line or Area and specify the starting node and ending node of the section you wish to include. As there are two possible routes to go from the starting node to the ending node around an Area, a **Reverse** button is provided for you to select the desired section.

After selecting the desired section, tap the **Finish** button, and you will be able to select another boundary for inclusion in the sub-area.

If you don't want to snap to anything then turn off the above tools by tapping on them and making sure they are not lit. Then you will be able to tap anywhere on the screen to drop a node, or to draw free-hand.

You may tap the **Edit** icon  to turn off the data entry fields and see more of the map for digitizing.

If you have added an erroneous segment, tap the **Undo** icon  to erase it.


If you wish to erase the entire digitized Area Feature, then tap the **Reset** icon . **Beware that the erased Feature cannot be restored.**

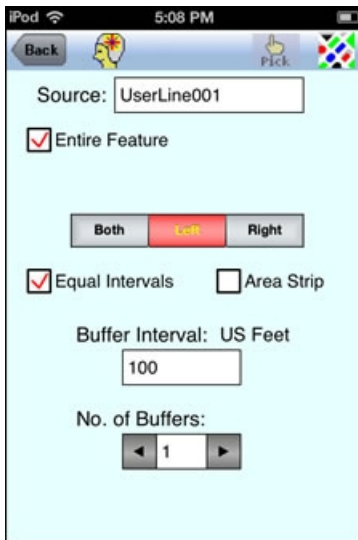
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Create Buffers

You may create a buffer zone around a Point, a Line or an Area Feature.

Suppose we wish to add a 100 ft riparian buffer zone to the triangular land property in mybuffers.pmp. We have already created the **Line Feature** along the river on the map.

Touch the Line Feature to highlight it in orange color then tap the Buffering icon  to display the buffering dialog.



The buffer parameters default to those used by the last saved job. You may tap the **Map View** icon  if you wish to select a different Feature as the **Source**. Tap the **Back** icon to return to the Buffering screen from Map View.

The app will allow you to create multiple buffers at a fixed interval, multiple buffers at different distances from the Feature, as well as **Area Strips** with specific starting and ending distances.

In addition, you have the option to buffer the **Entire Feature**, or just a part of it by unmarking **Entire Feature** then specifying the starting and ending nodes.

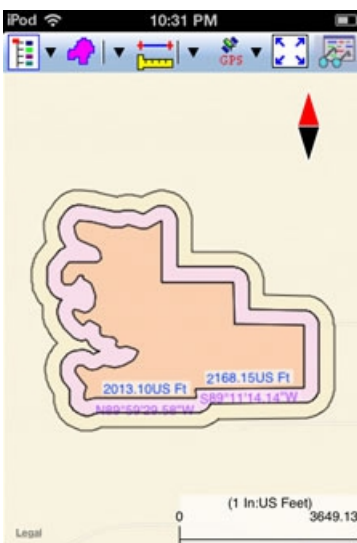
For our simple example, we will just make one buffer at **100** ft on the left side of the Line Feature. Make sure **LEFT** is selected.

Tap the **Solve** icon  to create the buffer.

Tap the **Back** button to return to the main Map View. You may touch the buffer area to highlight it.



You can use a similar procedure to create a single buffer or multiple buffers around an **Area Feature**. A sample screen from the **example2.pmp** job file is shown below, with Map set to **Show Standard**:




For an **Area Feature**, you can create **Inside** buffers or **Outside** buffers. If you just wish to buffer a portion of the boundary of the area, then unmark **Entire Feature**, and specify the starting and ending nodes. As there are

two possible routes to go from the starting node to the ending node, a **Reverse** checkbox is provided.

The **Area Strip** option will let you create buffer strips with given starting and ending distances. For example, if you wish to create a 10 ft wide buffer strip that starts 20 ft from the Area Feature boundary, and another 20 ft wide buffer strip that starts 50 ft from the Area Feature boundary, you would enter the following values into the table:

| | Start | End |
|---|--------------|------------|
| 1 | 20 | 30 |
| 2 | 50 | 70 |

Tap on a buffer zone to highlight it then tap the Feature Properties

icon  to view its perimeter and area values. Please note that the net area for each outside buffer is the total area less the area of the Area Feature. If you are interested in obtaining the area of the buffer strip in a set of multiple outside buffers of equal intervals, then please mark the **Area Strip** checkbox before creating the buffers.


In the **example2.pmp** file, there are two outside buffers created with a 300 ft buffer interval, and with the Area Strip checkbox marked.


If you create overlapping buffers, please note that the newly created buffer will lie below the one created earlier.

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

Example for Digitizing an Area

In the **mybuffers.pmp** job, we would like to digitize the remaining land plot so its area can be reported.

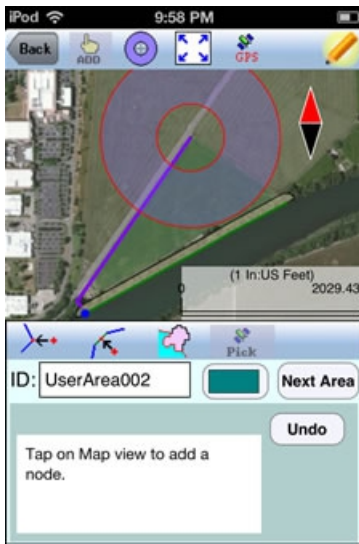
First, select the Add Area  icon from the Tools menu.



Tap the **Snap to Node** icon  to turn it on.




Tap on the top-most node on the left side then tap the **Snap to Node** icon  to turn it off. This will allow you to drop free nodes to digitize the left side of the triangular shape. as shown below. You may want to make use of the **Node Tool**  to help you place these two nodes more precisely.





Then tap on the **Node Tool**  icon to turn it off, and tap the **Snap to Node**  icon to turn it on. Tap on the node at the right corner of the triangular area to add the right side of the Area Feature.



As the buffer area may have a curvy or jagged outline, instead of digitizing along the upper boundary of the buffer area, we could save time by making use of the **Include Boundary** tool. Tap on the  icon so it is lit.

Tap on an end cap of the buffer area to highlight it. Select the starting node and ending node on the buffer boundary as shown below.



Tap the **Back** button to complete the Area Feature creation and return to Map View.



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Feature Properties

The Feature Properties screen will show the length of a highlighted Line Feature, or the perimeter and area of a selected Area Feature or Buffer.


You may also specify the line style and area pattern for your Feature by tapping the **Pattern** button in the Feature Properties screen then selecting the desired symbols and colors.

After touching a Feature to highlight it,

you can call up the Feature Properties screen by tapping the Feature

Properties icon .

For example, in mybuffers.pmp, you can tap the triangular area to highlight it.

Then you can tap on  to display its properties. Tap the **Coordinates** tab to view the coordinates of the nodes in the selected line or area. You may change the area pattern if you wish.

Show Segment, Area and Corner Angle Labels

For Line and Area Features, you may opt to have the segment, area and corner angle labels displayed on those Features when feasible. On the **Coordinates** page, mark the checkbox for the labels you wish to see:

Show Corner label

Show Segment label

Show Area label (for Area Features only)

Display Area and Length

For Line and Area Features, you may view the size of the area and the length of the perimeter by tapping on the **Area/Length** tab.

If you wish to delete a Feature, first select that Feature then tap the **Tools**

Menu icon  and select the


Delete selected tool .

Beware that once an item has been deleted, it cannot be recovered.

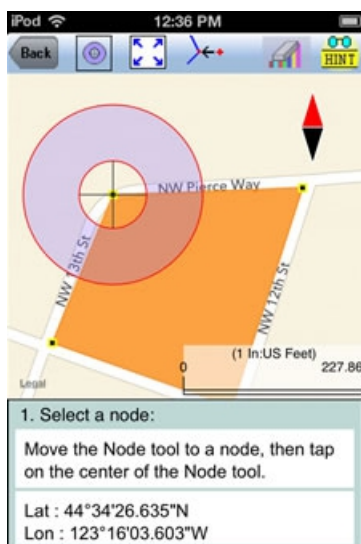
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Mode Node

The **Move Node** tool on the Tool Menu will let you adjust the position of an existing Point Feature or a node on an Area Feature.


To move a node on a Feature, first tap on the Feature to select it. Then tap on the Digitizing Tool Menu and select **Move Node**. If the Move Node icon  is already displayed, then simply tap on that icon to get to the Move Node screen.

Drag the **Crosshairs** to the node you wish to move. Tap once in the center of the donut to mark the node to be moved.



If you've tapped on the wrong location, you may tap the **Reset tool** icon  to reset the selection then select the correct location.

Then drag the **Crosshairs** to the new position and tap once in the center of the donut to affix the node there.


Turn on the **Snap to Node** icon  if you wish to place the node exactly on an existing point or exactly on a node of an existing Area Feature.


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
Measure Distance



If you would like to know the distance between two or more map locations, first tap on the **Measure Distance** icon




 on the **Measure Tools** pull-down menu. Then tap on the map locations to have the distance calculated. The total distance as well as the length and direction of the last segment added will be displayed.

Whenever you need to place a node precisely, tap on the **Node tool**  then use the crosshairs to zero-in on the desired location.

Turn on the **Snap to Node** icon  if you wish to snap to an existing node.

You may use the **Undo** tool  to backstep or use the **Reset** icon  to erase all segments that you have entered so far.


You can tap on the **Full-screen View** icon  to hide the distance information panel and see more of the map.

Please note that the Measure Distance tool will not retain the **temporary** shape you have digitized for computing the distance.


When you no longer need the displayed information, tap the **Back** button to close this screen and discard the temporary shape.


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Measure Area


The **Measure Area** tool  on the **Measure Tools** pull-down menu will compute the area enclosed within a boundary that you form by tapping on

the map.


Whenever you need to place a node precisely, tap on the **Node tool**  then use the crosshairs to zero-in on the desired location.

Turn on the **Snap to Node** icon  if you wish to snap to an existing node.

You may use the **Undo** tool  to backstep or use the **Reset** icon  to erase all segments that you have entered so far.

You can tap on the **Full-screen View** icon  to hide the distance information panel and see more of the map.

You can also turn off the Add Node icon then tap on the area to see a pop-up of information for this area.

Please note that the Measure Area tool will not retain the **temporary** shape you have digitized for computing the area. If you want to digitize an **Area Feature** that will be saved to the job then use the **Add Area** tool  instead.

When you no longer need the displayed information, tap the **Back** button to close this screen and discard the temporary shape.

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Save the Job File

To save the data in the currently open file, tap the **Main Menu**, select **Job** then select **Save**. The file extension will be ***.pmp**.

To save the data under a different file name, tap the **Main Menu**, select **Job** then select **Save As**. Enter the new file

name. The file extension will be ***.pmp**. For example, if you wish to keep the example files intact, you could open each of them then save them under new file names.

The *.pmp files will reside in the **Documents** folder for the application. To access your *.pmp files outside of the application, first sync your device with the iTunes® program. Select your device then scroll down to the **File Sharing** section. Click on the **Buffer & Stakeout** app name. After a while, the data files associated with this app will show up on the right-hand side.

Also note:

Before updating to a new version of **iOS**, first back up all you apps and data files. Also, should you decide to remove an application software for some reason, beware that all the associated data files will be deleted. If you wish to save the data files, please save a copy to your desk-top computer before removing the app.

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Export to PDF




To save the Feature and buffers drawing and data as a PDF file, first tap the Zoom-Fit icon to fit the map elements to the screen, then tap the **Main Menu** icon, select **Export PDF**.


To export to a new PDF file, tap on the **New** button. Rename the file, if you wish, then tap on **OK** to confirm

The contents of the PDF file will be displayed. The first page will show the drawing. The following page(s) will show the coordinates and areas of the digitized Feature as well as any buffers

and/or sub-areas in the job.

If you wish to overwrite an existing PDF file, then select that file from the list. **Beware that doing so will erase all the existing contents of the selected PDF file when you confirm to replace the old data with the new data.**

To make sure you really want to overwrite an existing PDF file, tap on the **View File** check box then select the file you wish to view. In this mode you will see a **View** icon  instead of the green check mark. Tap the **View** icon  to display the contents of the highlighted PDF file. Then tap the **Back** button to return to the File Dialog. When you are ready to overwrite the file, unmark the **View File** check box then tap on  to overwrite the file.

If you have an AirPrint Printer, you may tap on the **Printer** icon  then confirm to print the contents of the PDF to that printer.

The exported PDF files will reside in the Documents folder for the application. To access the PDF files exported from the application, first connect to the iTunes® program then look in the Documents folder for the **Buffer & Stakeout** app.

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Export to DXF

The Features in the working job file may be exported to a DXF file. The exported DXF file will reside in the **Documents folder** for this app. The DXF file can be used with external programs such as PC-GIS PRO and AutoCAD® .

To export the Features to a DXF file,

select **Export to DXF** from the **Main Menu** .

Select the name of the file into which to export the Feature data then tap on the **OK** button. If you wish to export the data into a new file then tap on the **New** button. You may confirm the displayed new file name or overwrite it with your own new file name.

The Feature data will be exported in LLA WGS84(1150)/ITRF00 and Epoch 01/01/2014.

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Email the Files

You may email a PDF file (*.pdf) or a Job file (*.pmp) by tapping the **Main Menu** icon then selecting **EMail Files**.

To output a file to email, first enter the destination email address, select the file type, mark the checkbox for the files you wish to send, then tap the **Send** button.

When the email is displayed with the attachment, tap the **Send** button at the top to send the email, or tap **Cancel** to cancel the action.

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Point Stakeout


The **Point Stakeout** function in conjunction with GPS can help you locate a Point Feature or a node along the perimeter of an Area Feature or buffer zone.

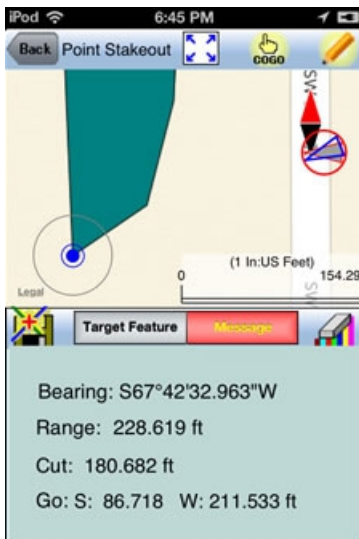
As this app will let you position a point by entering its coordinates, you could use this capability to locate an old survey marker on your property. You could use the same method to locate an old well overgrown by bushes if you have a record of its coordinates. For this reason, it is

helpful to use GPS to record the coordinates of important locations or structures for future reference.

The accuracy of the stakeout will depend on the accuracy of the GPS receiver used. Keep in mind, though, that GPS elevation errors are usually twice or three times the horizontal position errors.


You must activate GPS before you can access the Point Stakeout function.

Tap the GPS menu icon  then select **GPS ON** to turn the GPS on. From the same menu, select **Point Stakeout**.



Select a Feature from the map when the **Target Feature** field is highlighted. Alternatively, you can tap the **Browse** button then select from the listed Features.

If you have selected a Grid Line or an Area Feature, you may select which Node you would like to stakeout. Type in the desired Node #, or tap the little right arrow button to change the Node # to another node in the same Feature.

Tap the  icon to turn it off when you need to perform gestures on the screen. Tap this icon to turn it back on when you wish to select a Target

Feature from the screen.

In the **Antenna Height** field, enter the height of your antenna above the ground.

Click the **Settings** button to setup how the stakeout will be graphically displayed. In the **Stakeout Setup** screen you may turn off the Navigation Beep if the constant beeping bothers you.

You may also specify the **Tolerance** range as well as the type of notification you wish to receive when you get within the tolerance range of the target.

If you mark the checkbox for **Display Message**, then when you are inside the target range, the "Target!" message will flash on the screen.

If you mark the checkbox for **Target Beep**, then when you are inside the target range, beeps will be sounded.

To use the tolerance range for checking only the horizontal distances, select **2D** for **Stakeout Mode**. If the the tolerance range is to be applied for checking the elevation, then select **3D**.

You can also specify how to keep the screen focused on your location by selecting an option for the **Stakeout Zoom Mode**. In the **Autoscroll** mode, the job map will scroll to keep your position displayed on the screen while you are moving along. The map scale will not change. In the **Autozoom** mode, when you hit the border of the screen, the app will automatically zoom out to let you see more of the job map.

Your position is represented by the GPS marker on the screen. The app will report your GPS position in relation to the target location.

Bearing or **Azimuth** is the direction

from your GPS location to the specified Target Stake Point or Node.

Range is the direct distance from the GPS location to the Target Stake Point or Node.

Cut or **Fill** is the difference in elevation from the current location to the Target Stake Point or Node. "Cut" indicates that your current position is higher than the Target. "Fill" indicates that your current position is lower than the Target.

You may use the values displayed in the **Go** field to help you reach the target. On the GPS marker, the solid grey arrow points in the direction you are moving, and the hollow blue arrow points in the direction of the Target. When you are moving in the right direction, these two arrows will coincide.


After you have successfully reached your target location, you can drive a stake into the ground at this location.

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Line Stakeout

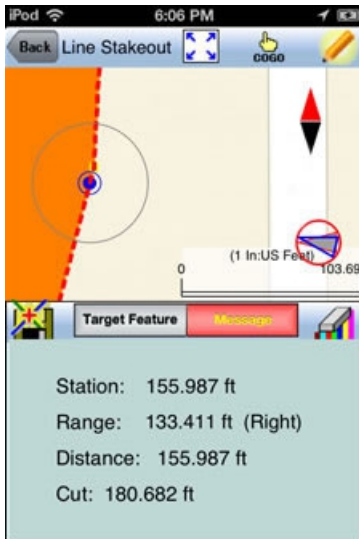
You may use **Line Stakeout** to find your position relative to a Line Feature or the boundary of an Area Feature or a buffer zone. This function will come in handy when you need to lay out fences around the buffer zone. The accuracy of the stakeout will depend on the accuracy of the GPS receiver used.

You must activate a GPS Receiver before you can access the Line Stakeout function. Tap the GPS menu


icon  then select **GPS ON** to turn the GPS on. From the same menu, select **Line Stakeout**.

Select a Line or Area Feature for the

Target Feature field.



Select or enter the **From Node** and **To Node** on the target Feature.

Tap the  icon to turn it off when you need to perform gestures on the screen. Tap this icon to turn it back on when you wish to select a Node from the screen. Please note that you can only select a node when the cursor is in the Stakeout Node field.

If you are interested in the direct line between the beginning and ending nodes, then select **Direct** for the **Mode** field, as shown in the above screen. On the other hand, if you are interested in the line segment on the Area Feature, then select **Path**.

Your position is represented by the GPS marker on the screen. The **Target** for Line Stakeout is the projection of your GPS position on the selected line segment. As you move along in the vicinity of the Grid Line or Area Feature, you will see information displayed about your position relative to the target line segment. Such information will not be displayed if your position cannot be projected onto the target line segment.

In the **Antenna Height** field, enter the height of your antenna above the

ground.

Click the **Settings** button to setup how the stakeout will be graphically displayed. In the **Stakeout Setup** screen you may also specify the **Tolerance** range as well as the type of notification you wish to receive when you get within the tolerance range of the target.

If you mark the checkbox for **Display Message**, then when you are inside the target range, the "Target!" message will flash on the screen.

If you mark the checkbox for **Target Beep**, then when you are inside the target range, beeps will be sounded.

To use the tolerance range for checking only the horizontal distances, select **2D** for **Stakeout Mode**. If the the tolerance range is to be applied for checking the elevation, then select **3D**.

You can also specify how to keep the screen focused on your location by selecting an option for the **Stakeout Zoom Mode**. In the **Autoscroll** mode, the job map will scroll to keep your position displayed on the screen while you are moving along. The map scale will not change. In the **Autozoom** mode, when you hit the border of the screen, the app will automatically zoom out to let you see more of the job map.

The first stakeout location on the target line segment is called the **Initial Station**. Enter the distance of this initial station from the From Node.

The **Range** field shows your perpendicular distance from the line segment, ie. the distance between your GPS and the Target. Therefore, you could use the Line Stakeout function to help ensure that you are always moving parallel to a line or boundary

at the desired distance.

Station is the distance between the From Node and the Target.

Distance is the distance between the Initial Station and the Target.

Cut or **Fill** is the difference in elevation from the GPS location to the target. "Cut" indicates that your current position is higher than the target. "Fill" indicates that your current position is lower than the target.

Again, if the GPS location cannot be projected on the target Line or Area Feature, then the data fields on the Message page will be blank.

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