

Deed Calls Pro

Help

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Overview

The Deed Calls Pro app provides a number of functions for creating Points, Lines and Areas that represent land features. It will let you import or enter deed calls, display the deed plot, and save the deed calls file. You can use the Auto-close function to automatically close a deed plot. You can have the deed plot adjusted by Compass Rule or Transit Rule. You can enter an orientation angle to rotate the deed plot.

Deed Calls Pro can turn the deed calls into a Feature (shape) on the map. It can also generate deed calls from an existing Feature.

In addition, this app will enable you to perform the following tasks:

- * Import the shapes from a Shapefile or a DXF file.
- * Load optional .pim or .pbm background image files.
- * View GPS position on displayed map.
- * Select from LLA, UTM, SPC and NEZ coordinate systems.
- * Select distance units, including Rods and Chains.
- * Precisely digitize Points, Lines and Areas over the built-in Map.
- * Move existing nodes to fine-tune the map drawing.
- * Take photo using the Camera function and attach it to a Feature.
- * View position, length and area values for the Features.
- * Sub-divide an Area.
- * Combine two adjacent Areas into one Area.
- * Create buffer zones around a Line or Area Feature.
- * Label the Lines with segment lengths and directions as well as corner angles.
- * Label the Areas with Feature ID and size.
- * Measure distances and areas without saving the shapes.
- * Create a Point from the entered address or coordinates.
- * Create a Point or record a node by picking the GPS location.
- * Save the job data file (*.pmp) for later use.
- * Make use of iCloud storage.
- * Export data in DXF format.
- * Output the drawing, the deed calls and the optional background map to PDF.
- * View a PDF file in the app's Document folder.

- * Email files to yourself or your colleagues.
- * Send or receive files via FTP.

Please follow the examples in this document to learn how to use the functions in this software for your mapping application.

Map View

The **Map View** is the main screen that shows any spatial data (Features) and/or background map present in the currently active job.

You may select a displayed **Feature** by tapping on it in Map View. When you do so, the selected Feature will be highlighted in the default orange color. The Feature ID and the location coordinates will pop up in Map View.

You may also select a Feature by tapping on the corresponding Feature record in the spread-sheet called the [Sheet View](#).

After selecting a Point, Line or Area Feature, you may tap the [Feature Properties](#) tool icon to assign a different symbol to represent it. You may also enter a description for the Feature or assign a pre-defined description to it via Feature Properties or Sheet View.

You may zoom into the map by double-tapping, or by pulling two fingers apart on the screen. You could zoom out of the map by tapping two fingers on the screen simultaneously, or by pinching two fingers on the screen.

The map scale is displayed at the lower-right corner of the Map View.

Displayed across the top of the **Map View** are the following tool icons.

Tap the **Main Menu** tool to see a menu of functions:



The **Topic Menu** provides functions to create, edit, move, delete or set up automatic labeling for the Feature Topics:



The **Map Tools Menu** lists the digitizing tools as well as the functions for entering deed calls and linking photos to the Features. Tap the **pull-down arrow** to reveal the map tools. The icon for the currently active map tool is displayed. For example the **Add Point manually** icon is initially displayed by default:



The **Utilities Menu** provides access to functions for measuring distances and areas, locating a point by address, subdividing or combining areas, as well as creating buffer regions. Initially, the Measure Distance utility is shown:



Tap on the **Zoom Fit** icon on the Toolbar to display all foreground Features:



The **GPS** Menu provides access to GPS-related functions:



With a Feature selected, you will be able to view its coordinates as well as assign Attribute and Values to the Feature by using the **Feature Properties** tool:



Tap the **Topic View** toggle to select an active Topic:



Tap the **Sheet View** toggle to display data in a spreadsheet:




Additional tool icons may be displayed when you work with a specific function. All of these functions will be covered in this document. To gain a good understanding of the basic mapping functions provided by this app, please read the first ten sections of this document in the order presented.

On-screen keyboard

An on-screen keyboard will automatically pop up when the focus is on a data entry screen. After entering data, tap the **Return** button on the pop-up keyboard. If a **Next** button is displayed in the data entry dialog, then tap that button to go to the next step. To hide the keyboard, tap the **Hide Keyboard Key** on the pop-up keyboard.

When you tap on an existing value in a data entry field, if one character is highlighted, you may replace it by entering a different character. If the cursor is displayed, you may insert characters at that location. To replace the entire text or numeric value in the field, first swipe the field to highlight all the characters then enter the new data.

When entering numeric data, you will notice that there is a **Separator Key**  showing several symbols on it. This key will facilitate data entry in several ways.

To enter a distance value with a fractional part, tap this key to put in the decimal point.

To enter angles in **DMS** (Degrees- Minutes-Seconds), if your data value will not fill in all the places, then tap the separator key after entering the desired value. For example, to enter the longitude of 91°09'26.082"W, you could type in 0910926.082W. Or, you could type 91, tap the special key, type 9, tap the separator key, then enter 26.082W.

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Set up a Job

The application software requires a job file to be open for it to work with. The **Job Menu** under the **Main Menu** provides functions for opening a job, saving a job, importing a set of Shapefiles as well as importing/exporting a DXF file.

Opening or Creating a Job File

To open an existing job file, tap the **Main Menu** icon, select **Job** then select **Open Job**. Select a job file to open, such as **corners.pmp**. (The job files for this app have the **.pmp** file name extension.) The job data will be displayed.

To create a new job file, tap the **New** button. Accept the proposed file name or enter a unique file name then tap the **OK** button. (Yes, it's okay to type over the displayed file name.)

If you are working with a job file and want to open another job file instead, select **Main Menu**, select **Job**, select **Open Job** then select the desired file name. This action will automatically close the previously opened file.

If you are not sure which job file you are working on, select **Main Menu**, select **Job** then select **Open Job** to view the File Dialog screen. The name in the **File Name** box is that for the currently open file.

To cancel out of the screen for opening a file, simply tap the **Cancel** button.

Saving 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 in the **FileName** field.

Please note: If you enter or select an existing file name to display in the **FileName** field, the contents of that Job file will be overwritten with the data in the active Job upon your confirmation.

Let's save the **corners.pmp** example file that you have just opened under a different name, such as "mycorners". This way, you can work with **mycorners.pmp** and keep the original corners.pmp file intact for later use.

It's a good idea to save your job under a different name as a back-up before subdividing an Area Feature in case you need to use the original intact Area Feature for some other purpose. The newly saved file will be the active job file. Therefore, if you wish to work on the original file, then open that job file before proceeding.

Whenever you open another job, the program automatically saves the data in the current job and closes the current job.

Accessing the Documents Folder

The data files, such as the *.pmp job files, will reside in the **Documents** folder for the application. To access your data files outside of the application, first sync your device with the iTunes® program. Then you should see an **Apps** tab across the top of the screen. Click on that tab then scroll down to the **File Sharing** section. Click on the **Deed Calls Pro** app name. After a while, the data files associated with this app will show up on the right-hand side.

You may copy files between the Documents folder for the app and your desk-top computer. You can drag files into or out of this Documents folder. You may use the **Add** button on the iTunes® screen to select and add files from your computer to the Documents section. **Make sure the job file you are copying is not the working job file.** In other words, open a different job file to make it the working job file.

To delete a file, first highlight it then press the **Del** button on your computer.

Caution: A deleted file cannot be recovered. Always make sure you really want to delete a file before proceeding.

Please 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.

Specify the Coordinate System

You may use **Setup - Coordinate System** to select the **LLA**, the **UTM** or the **State Plane** coordinate system for displaying the job data or a background map prepared by using that coordinate system. In the **Coordinate System Information** screen is also where you would specify the **distance unit** for displaying data in the active job.

Some geo-referenced raster images are based on a **user-defined coordinate system**. You may use the optional PC-GIS software to prepare a user-defined coordinate system then use iTunes to copy the **user_cor.sys** file (in lower-case letters) from the PC to the Documents folder for Deed Calls Pro. On Deed Calls Pro, select **Setup - Coordinate System** then select User Defined to access the new coordinate system.

If you have used PC-GIS to set up a **local NEZ plane**, then use iTunes to copy the **user_pla.sys** file (in lower-case letters) from the PC to the Documents folder for Deed Calls Pro. On Deed Calls Pro, select **Setup - Coordinate System** then select NEZ to access the NEZ system.

Following are some details about the local NEZ system if you wish to have the location of the Features represented in terms of their X-Y position relative to a reference location. The N (Northing) corresponding to the Y value, the E (Easting) corresponding to the X value, and the Z (Z-value) corresponding to the vertical

distance along the Z-axis. The reference location coordinates are usually set to values that permit all the locations on the resultant map to be expressed with positive X and Y values. For instance, if the map spans an extent of about 3500 ft both ways, and the reference location is set near the center of the map, then the reference position could be assigned a value of (2000, 2000).

If you know the values for your local transformation scale and angle, you could use this app to easily define a local NEZ plane. From the Main Menu, select Setup then select Coordinate System. Select **NEZ**. Tap the Edit button then enter a name for your new plane. Tap in the first data field under the GPS Reference section. Enter the LLA coordinates of the reference point, or tap the Pick button then select the reference point from Map View if that point has been digitized in Map View. Enter the decimal values for the **Angle** and Scale fields. Tap on **OK** to save your settings. Tap on **OK** again to return to Map View. When you tap on the map, you will see that the coordinates are now displayed in terms of the NEZ system.

If you don't know the local transformation scale and angle, but you have a survey-grade GPS handy, you could use this app to calibrate your NEZ coordinate system based on a Reference Point and a Control Point. It's best to select these two points near the two opposite corners of your work site. You will need to obtain the coordinates for these same two points in two different coordinate systems. To do so, first tap the **Control Point** checkbox in the NEZ System screen. The pull-down arrow on the same line of this option will show two modes: **Reference Point** and **Control Point**. For each mode, enter the LLA values for the GPS coordinates of the point and the NEZ coordinates you wish to assign for the same point. The software will automatically fill the Angle and Scale fields with the computed values. Tap the green check mark at the top of the screen to save your settings. Tap on **OK** to save your settings. Tap on **OK** again to return to Map View. When you tap on the map, you will see that the coordinates are now displayed in terms of the NEZ system.

Importing Shapefiles

You may import the data from Shapefiles for use within this app. As each Shapefile has several files associated with it (e.g. the .shp, the .shx, the .dbf, and the .prj files), please make sure all these files are present in the **Documents folder** for the application.

To import a Shapefile, first open the desired Job file, or create a new Job file. Choose **Job** then select **Import Shapefiles**, select the desired Shapefile then tap the **OK** button.

Select the Datum, Coordinate System, Unit and Region in which the data was saved in the Shapefiles then tap the **OK** button. If the selected Datum and Coordinate System do not match those in the Shapefile, the data may fail to come in or the shapes may not be properly displayed.

If the working job is not empty, program will convert the imported data to the same coordinate system as the working job.

If a GSB file (Canadian grid file) is to be used, tap the **Load** button then select the appropriate file. Use the **Unload** button to remove the GSB file.

Importing a DXF file

You may import the shapes from a DXF file and work with them in this app.

To import a DXF file, first open the desired Job file, or create a new Job file. Choose **Job** then select **Import DXF**. The Import DXF screen will list all the DXF files present in the **Documents folder** for this app. Select the desired DXF file then tap the **OK** button.

Select the Datum, Coordinate System, Unit and Region in which the data was saved in the DXF file then tap the **OK** button. If the selected Datum and Coordinate System do not match those in the DXF file, the data may fail to come in or it may not be properly displayed.

If the working job is not empty, program will convert the imported data to the same coordinate system as the working job.

If a GSB file (Canadian grid file) is to be used, tap the **Load** button then select the appropriate file. Use the **Unload** button to remove the GSB file.

Exporting a DXF file

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.

To export the Feature data to a DXF file, choose **Job** then select **Export DXF**. Mark the Topics that are to be exported and select the desired options then tap the **OK** button.

Mark the **3D** checkbox if the elevation values are also to be exported.

Select the **In Block** option if you wish to export the Features in block format (one layer per Topic) into the .DXF file.

Mark the **With Attributes** checkbox if the Features are to be exported along with their attribute values.

The app will create a DXF layer for each Topic marked for export. If you wish to export the selected Topics to the same layer, then mark the **Export to one layer** checkbox and enter the name of that layer in the **Layer name** box.

The app will export data in the same coordinate system as the working job. If the unit is Chain/Link/Rod, data will be exported in US Feet. The distances and angles will be exported in the active distance and angle units.

Set up Elevation and Angle

Select **Elevation and Angle** under **Main Menu - Setup** to specify the desired angle unit (**DMS**, **Degree**, **Mils**, **Grads**) and azimuth system (**Azimuth** or **Bearing**). If Azimuth is chosen, also specify **North** or **South**.

This setup screen will also let you select the elevation system used for displaying, importing or exporting elevation values. Select **Orthometric(MSL)** when working with Mean-Sea-Level elevations. Select **Ellipsoidal(HAE)** when working with elevations based on the ellipsoid.

Set up Feature Labels

This app gives you the option of labeling the line segments, areas and corner angles for the selected Feature when feasible. (See [Feature Properties](#).)

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.

You will also have the choice of showing either the direction angle or the length value above the line segment. The other value will then be shown below the line segment.

Set up Auto Label

You will also have the option of having the all Features in the selected Feature Topic labeled with their ID information and/or Attribute Values.

You can define the default font color and size as well as the placement of these labels with respect to the Features after selecting **Auto Label** under **Main Menu - Setup**.

These settings will be applied to newly created labels. They will not affect any existing labels.

iCloud Setup

This app supports iCloud® service for file storage and retrieval. To make use of iCloud® Storage, make sure that Documents and Data is turned ON under the Cloud setting on your device.

In this app, under **Menu/Setup/iCloud**, there are a number of check boxes for the various types of files that could reside in cloud storage.

Whenever you enable iCloud for a file type, the app will copy the selected type of files to your iCloud® storage location when you tap the **OK** button on the iCloud Setup screen. Afterwards the app will look for that type of files only from the iCloud storage until you unmark the iCloud check box for that file type.

Similarly, whenever you disable iCloud for a file type, the app will copy the selected type of files to your local Documents folder when you tap the **OK** button on the iCloud Setup screen. Afterwards the app will look for that type of files only from the local Documents folder.

For example, if you select iCloud® storage for the “**Job**” file type under **Menu/Setup/iCloud**, the folder for loading and saving the .pmp files and for importing the Shapefiles would be on the cloud. The app would attempt to look for the files in iCloud. Therefore, if you had added new Shapefiles to your local Documents folder, the app will not be able to access the new Shapefiles until you unmark the iCloud storage setting for the “**Job**” file type.

Helpful Tip: As there are two possible places for storing your files, when you are puzzled why you are unable find a certain file, be sure to inspect the iCloud Setup under **Menu/Setup/iCloud**.

To view the names of the files stored on cloud, tap the **Settings** icon on the Home page of your iOS device then select **iCloud\Storage & Backup\Manage Storage**. Under Documents & Data, select iGPSGIS II.

The files stored at the iCloud® storage location can be accessed by another iPad® or iPhone® device using the same iCloud® account. This makes it possible to share the *.pim background map files.

A word of caution regarding sharing the **.pmp job files** or the **.fbr feature list files** using iCloud. As defined by Apple, if two apps use the same file on iCloud, these apps must synchronize the file automatically. Therefore, you must take care when using the same file in two different apps or on two different devices if you will be making changes to the file. For example, suppose you and a colleague share the same iCloud account and open the same .pmp job (stored on iCloud). You add a Point Feature, while your colleague adds a Line Feature. When you save the job, the job will be automatically updated on your colleague's device from the cloud. As a result, your colleague will gain a new Point Feature but lose the newly created Line Feature that he has not yet saved.

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Turn GPS On/Off

Where am I?

When you start a new job, the app does not know where you are.

1. With 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.


2. When Map is turned on, you could use the [Locate a Point by Address](#) function to enter your address or your coordinates to locate your position.

3. If your device is equipped with GPS or has Location Service, then you can tap the **GPS** icon  to turn on GPS. When prompted, confirm to allow the app to use Location Service to find your location. This will permit the app to immediately zoom to your location. (Make sure the **Location Service** is turned on for this application software under Settings on your device. With iOS6, Location Service setting is placed under Settings - Privacy.)

To view your current position and GPS accuracies, select **Position Info** after turning on the **GPS**. Wait 5 - 10 minutes to let the GPS stabilize. If your device is set to Auto-lock after a number of minutes then when it turns off, GPS will also turn off. You will need to unlock your device to continue working.

To nail down your location, you will need to digitize at least one Point location.

In the section titled [Digitize Features](#), we will show you how to digitize a Feature in the **mycorners.pmp** job file. As the points in this job are located in

Oregon, USA, you will want to tap on  to **turn GPS OFF for now**. Otherwise, the app will always zoom to your current location, which most likely is very far away from the sample job location.

Go ahead and turn on **Map** in the **Show Satellite** mode.

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Load Background Map

You may load various types of background map into a Job file.


Built-in Map

Tap on the GPS icon then select "GPS On" to turn on the GPS function. The GPS location marker will be displayed.

Tap the **Main Menu** icon then select **Map** to use the built-in Map.

Select the type of Map you wish to see, and the map will be displayed on the screen. (Make sure the **Location Service** is turned on for this app.)

Whenever you are connected to the Internet and your location can be determined, the default built-in Map for your device 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, landmarks, and bus stops.

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.

CMT Basemap

You may use **Menu/Basemap/Load BaseMap** to select a BaseMap to load into this app. Click on the desired **.pbm** file then click **OK**.

You can use the optional PC-GIS mapping software to prepare the .pbm Basemap file.

Registered Image

You may use **Menu/Background Map/Load Registered Image** to select a geo-referenced image in the .pim format to be loaded as the background for the job.

The Raster images (*.tif, *.jpeg, *.sid, *.ecw) to be used as background maps must be converted into the proper format (*.pim) before they can be loaded into the app. You can use PC-GIS to do so. PC-GIS is an optional mapping software program designed for use on a PC or on a Mac operating in PC mode.

As an example, use **Job/Open Job** and select the job file named cvoarea.pmp then tap on OK. This file contains a few Feature Topics. Now, use **Menu/Background Map/Load Registered Image** and select squawcreek.pim then tap on OK. The squawcreek.pim background map was prepared from a DRG map for Corvallis, Oregon.



To hide the background map, toggle the **Show** option under **Menu/Background Map** off. This does not remove the background map from the background.

To unload the background map, select **Close Background Map** under **Menu/Background Map**.

Click on the file you wish to load into Map View then click **OK**.

Job Map

You may select **Menu/Background Map/Load Map** to select another .pmp job file to be loaded as the background for the job.


Shapefiles

To import the Features from Shapefiles that have been transferred to your Mobile Device, choose **Menu/Job/Import Shapefiles**, click on the checkboxes for the desired Shapefiles to mark them for import then click on the **OK** button.

Each set of Shapefiles consists of several files (e.g. the .shp, the shx, the .dbf, and the .prj files). Make sure all these files have been copied to the **Documents folder** for this app so the app will be able to work with them.


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Topic View

The Features in your map are organized into Feature Topics, or Topics for short. To see a list of all the Feature Topics you have in the currently active job file, tap the **Topic View** icon . This icon is a toggle tool for turning the Topic View on or off.


When you tap on one of the Topics in the Topic View, that Topic becomes the **active Feature Topic**.

Also, when you to **tap on one of the Features in Map View**, the Topic, to which that Feature belongs, becomes the active Topic.

For example, in the **mycorners.pmp** job, there is one Topic named "**Corner**" that contains three Point Features represented by the blue dots. When you tap on , you will see "Corner" listed in the Topic View panel on the left side of the screen. You can tap on "Corner" to highlight it and make it the active Topic.


You can toggle the **display** of a Topic ON and OFF by clicking on the check box to the left of each Topic name.

To change the **symbol** assignment for a Topic, simply double-tap the existing symbol displayed by the Topic name in Topic View then select the new symbol.

The **Topic Menu**, represented by the **Topic Menu** icon , provides the function to create a new Topic, as well as a number of other functions that operate on the currently active Topic.


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Topic Menu

The **Topic Menu** contains functions that operate on the Feature Topics. It is accessed by tapping the **Topic Menu icon** .

Creating a New Feature Topic in a Job

Before adding a Feature to the map by digitization, you will need to select the appropriate Feature Topic into which that Feature will be placed. If such a Feature Topic does not exist, then you will need to create it.

To create a new Feature Topic in a job file such as **mycorners.pmp**, tap the **Topic Menu** icon  then select **New Topic**. Enter a Topic Name, such as "Well" and select **Point** for the Type field. Tap on the **OK** button to confirm.

Use the same procedure to add a new Topic named "**Plot**". Since land plots are regarded as area objects, select **Area** for the **Type** field.



You can add one or more **Attribute Names** (title of description) for a Topic and specify the data type and parameter. Let's tap the **Add** button in the **Topic Structure** screen, and enter "**Price**" as the (Attribute) Field Name. As the price will be entered as a numeric value, we will select "Decimal" as the **Field type**, and enter "2" for **Dec. Digits**.



Tap the **Add** button again. Notice the little pull-down arrow in the **Field Name** cell? This app comes with a number of **Built-in Attributes** that you may incorporate into a Topic as an Attribute. To add such an Attribute, tap on the pull-down arrow then select the desired item. Select **Area_Acres** and select "2" for **Dec. Digits**. This built-in Attribute will automatically compute the acreage of an Area Feature you place in the Plot Topic.

If you select the Elevation attribute, the MSL or HAE elevation will be used depending on what you've selected for the Elevation and Angle Setup.

When done, tap the **OK** button to close the screen.

Editing a Feature Topic

To edit an existing Topic, first tap on  and select that Topic from the Topic View panel. Now tap the **Topic Menu** icon  then select **Edit Topic**. You may make changes to the **Topic Structure**, such as by adding more Attributes to the Topic. Or you may tap the **Sheet Setup** tab and change the order in which the Attributes will be displayed in [Sheet View](#).

Let's add another Attribute to the "**Plot**" Topic in the **mycorners.pmp** job. Tap on  then tap on "**Plot**" in Topic View. Tap on  then select **Edit Topic** to display the Sheet Update screen.



Tap the **Add** button and enter "**Price/Acre**" for the Field Name. Select "Decimal" as the Field Type and enter "2" for Decimal Digits. Tap **OK** to confirm.

Defining a Formula

While creating or editing a Feature Topic, you may enter a formula for an Attribute based on the Values of other Attributes for the same Feature Topic.

The reason we added the "**Area_Acres**" Attribute to the "**Plot**" Topic in **mycorners.pmp** job is so that we can have the app compute the price per acre for each area in this Topic. In other words, we want to define for the "**Price/Acre**" Attribute the following formula:

Price / Area_Acres

To do so, first tap on  then tap on "Plot" in Topic View. Tap on  then select **Edit Topic** to display the **Sheet Update** screen.

Highlight the **Price/Acre** Attribute then tap the **Formula** button.



Tap the **Select Attribute** button and select "**Price**". Enter the division operator "/" then tap the **Select Attribute** button and select "**Area_Acres**". The resultant formula will be displayed in the Formula box.

Tap on **OK** to save the formula.



Specifying a formula for an Attribute means that the Value for that Attribute will be automatically computed from the Values of the Attributes used in the formula. The formula function will work on numeric Attributes but not text Attributes.

Moving a Feature Topic

In general, you will want to have Point Feature Topics and Line Feature Topics placed above the Area Feature Topics so that the Area Feature layers won't block out the Points and Lines underneath.


You can **change the order** of the Topic layers. To do so, first tap on  then tap on  and select **Move Topic**. A handle will appear by each Topic Name. Now grab a Topic by the handle and drag it to a different location in the Feature Topic List.

Deleting a Feature Topic

To delete an existing Topic, first tap on  and select that Topic. Then tap on  and select **Delete Topic**. This will delete the Topic definition as well as all the Features on that Topic layer.

Caution: A deleted Topic and the Features in that Topic cannot be recovered.

Auto Label

If you wish to have the Features displayed in Map View along with one or more of its identification labels or descriptions, first tap the **Topic Menu** icon  then select **Auto Label**.

You may opt to show the Feature's **Topic Name**, **Sequence#** or **Feature ID**.

You may select one or more **Attributes** to be displayed.

Select **Delete Labels** if you wish to have the labels deleted.

Select **Hide Labels** if you only want to hide the labels but not delete them.

Tap on the **Font** tab to change the font size, font type face, or the **Freeze label size in zoom** setting.

You can set the default size, color and placement of these labels with respect to the Features by using **Main Menu - Setup - Auto Label**.

The settings under **Main Menu - Setup - Auto Label** will only be applied to newly created labels. They will not affect any existing labels. If you wish to have the new settings applied to all existing auto labels then you should use the **Delete Labels** button to remove all existing auto labels then create the auto labels again.

You may adjust the placement of an auto label by tapping on it to select it in **Map View** then dragging it to the desired location.

You may change the properties of an auto label by tapping on it to select it then tapping on the [Feature Properties](#) icon.

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Digitize Features


You may manually add new Features to the current Job file. GPS is not needed, but if you wish, you could pick the GPS position for adding a Point Feature or for adding a node for a Line or Area Feature.

Let's open the **mycorners.pmp** job, to which we have previously added a few Feature Topics.


Adding a Point Feature


The first step in digitizing a Point Feature on the displayed Map is to create or activate a Point Topic.



In the **mycorners.pmp** job map, tap the **Topic View** icon  then select the Point Topic named "**Well**". Double-tap on the point symbol for this Topic then select the last symbol on the second column of the CMT DEFAULT page. Tap on OK then tap the Topic View icon to toggle the list of Topics off.

Now, tap the pull-down arrow beside the **Map Tools** icon. Select **Add Point Manually** .


Tap once on the satellite Map near the houses with red roof tops to mark a well. Tap on the Map again in the area between the triangular plots and the larger plot to their right.

The **Add** tool  at the top is a toggle switch that you can use to halt the point digitization and reactivate the regular **touch-screen** mode so you may zoom or pan the screen. Tap on this toggle again when you are ready to add more points.

If there are existing Features on the map and you want a new point to snap to one of the existing Features, then tap the **SnapToNode tool** . When the SnapToNode toggle is on, the point you add will be dropped on top of the nearest Point or node.


If your device has GPS capability, you could add a point right at the current GPS position. To do so, first tap the **GPS icon**  to turn on GPS then tap the **Pick GPS icon**  to add the Point Feature. (Do this in another job file as we do not wish to add a very distant point to this sample job file.)

Look carefully at the three points marking the three corners of a triangular plot of land. You will notice that the right-most corner of the plot is actually clipped off and is not represented by a single apex. We would like to add another point at the fourth corner of this land plot.

To accomplish the daunting task of placing a dot precisely at the desired location, tap on the donut-shaped **Node tool** . 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 fourth corner of the land plot. 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.)

When done with the point digitization, tap the **Back** icon to end the digitizing session and go back to Map View.

Add Point by Coordinates

If you know the coordinates for the point you wish to add to the map, you may add the point by using this information. To do so, first create or activate a Point Topic. Then tap the pull-down arrow by the **Map Tools** icon and select **Add Point by Coordinates** .


Enter the known coordinates then confirm the screen. Make sure you specify the correct North or South Latitude, and the correct East or West Longitude.

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

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


Adding a Line Feature


To digitize a Line Feature, first select an existing Line Topic or create a new Line Topic.

In the **mycorners.pmp** job map, tap the **Topic Menu icon**  then select **New Topic**. Enter the Topic Name "**Fence**". Since this is a linear object, select **Line** for the **Type** field. Tap on the **OK** button to confirm.






Now tap on **Fence** to confirm that the Line Topic named "**Fence**" has been highlighted. Tap the Topic View icon again to hide the list of Topics.

When a Line Topic is active and you tap the pull-down arrow for the **Map Tools** icon, you will see that the **Add Line manually** tool is active. Tap this selection, and the Add Line manually tool icon  will be displayed as the active Map Tool.

Now, tap along the left border of the larger field to add a fence line. Use the **Node** tool  to add nodes and make a line that looks very close to the one shown below:




The **Add** tool , the **SnapToNode** tool , and the pick GPS position function work in the same way as for digitizing Point Features.

Turn on  **Snap to Line** when you wish to snap your new line to an existing Line or Area Feature. Then when you tap close to that Line or Area Feature, your new line will snap to the nearest node on the existing Line or Area Feature.



Include Boundary is a powerful tool that lets you incorporate all or part of a line or an area boundary in the new Line Feature you are digitizing. After turning this tool on, first tap on the line or area of interest then tap on the starting and ending nodes of the section you wish to include in your new line. Tap on the **Finish** button to finalize this action. Then you may select another boundary line to include, or continue to tap on the screen to drop nodes for the new line.


You may tap the **Undo** icon  to back-step and remove the last added node, if necessary.


When you have digitized the last node for the Line Feature, if you wish to add another Line Feature, then tap the **Next Line** button. Otherwise, tap the **Back** button to exit this screen.

When you tap on the Line Feature on the main screen, its Point ID and coordinate information will pop up briefly.

Adding an Area Feature


To digitize an Area Feature, first select an existing Area Topic or create a new Area Topic. Digitizing an Area Feature works the same way as digitizing a Line Feature, except that the Area Feature forms a closed region.

In the **mycorners.pmp** job map, tap on  then select the Area Topic named "**Plot**". Tap the Topic View icon again to hide the list of Topics.




When an Area Topic is active and you tap the **Map Tools** pull-down arrow, you will see that the **Add Area manually** tool is active. Tap this selection, and the Add Area manually tool icon  will be displayed as the active Map Tool.

In the screen for digitizing an Area Feature, you may tap on the **Area Pattern** button to select a different pattern and color for the Area Feature you digitize.

Let's create an Area Feature by joining the Point Features at the four corners of the nearly triangular land plot.

With the **Snap to Node** icon  turned on, tap close to each of the four Point Features in the clockwise or counterclockwise direction. You don't need to tap on the first point again. Tap the **Next Area** button to close the **Plot001** area you have just formed.

Now let's digitize the larger plot by the fence. Since the fence lies along one side of this plot, we can save some time by making use of the **Include Boundary** tool. In

the screen for digitizing an area, tap the **Include Boundary** icon . Tap on the Fence feature to display its nodes. Select the lowest node as the Start Node then select the uppermost node as the End Node. Tap on  to turn it off. Then use the **Node** tool  to help complete **Plot002**, which should look very close to the one shown below:



You may tap the **Undo** icon ↶ to back-step and remove the last added node, if necessary.

When you have digitized the last node for the Area Feature, tap the **Back** button. The software will automatically close the gap between the first and the last digitized nodes and return to the main Map View.

Adding Description for Digitized Features

To be able to enter descriptions to a Feature that you have digitized manually, you must have Attributes set up for the Feature Topic to which the Feature belongs. If you have not set up the Attribute Names while creating the Feature Topic, you can

do so after tapping on  then selectin **Edit Topic**.

Once the Topic/Attribute structure is in place, the Attributes can be presented in a spread-sheet format and you will be able to enter the corresponding Values into the cells. Please see [Sheet View](#) for details.

Another way to add or change the description for a Feature is through the Feature Properties screen. Please see [Feature Properties](#) for details.

Labeling the Features

There are two ways to display labels for the Features in a job.

1. Label all the Features in a Topic by using **Topic Menu - Auto Label**. This function is described under [Topic Menu](#). Try labeling the areas in the Plot Topic in **mycorners.pmp** with the Price/Acre.

2. Use [Feature Properties](#) to label a selected Feature with its corner angles, segment lengths and directions, and/or area with units. Some of these labels may not display because of the large map scale used or because there is not enough


room to display them in the map.


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Move Node

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


The steps for moving a node of a Feature are as follows:


1. 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.


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

2. Drag the **Crosshairs** to the node you wish to move then tap once in the center of the donut to mark the node.

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

When you wish to snap to an existing Point or node by tapping in its vicinity, remember to first tap on the **Snap to Node** icon  to turn it on


If the Crosshairs have moved off the screen, you could tap on the  icon to bring the Crosshairs back to the center of the screen.

You may turn off the instruction text by tapping the **View Hint** icon . This will free up more screen space for displaying the job data, especially when you are using your device in landscape mode.





Tap the **Back** button to exit this screen.

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Sheet View





After activating a Topic either by selecting it from the Topic View or by selecting one of the Features in that Topic, you may tap the **Sheet View** icon  to list all the Feature records in that Topic. The Sheet View presents the Features and their Attributes in a tabular format based on the Feature Topic setup.


We will use the **mycorners.pmp** job as an example. If you have been working with some other job, then select **Main Menu - Job - Open Job** and select **mycorners.pmp**.

Tap on    then tap on the "Plot" Topic name in Topic View. When you tap the **Sheet View** icon , you will see the spread sheet for this Topic.

Sheet View provides an alternative way for you to select the desired Feature for viewing or editing. Simply tap a record in Sheet View and watch the corresponding plot get highlighted in the map.

Normally only a few records will be visible along with the map display. You may click on the **Full Sheet View** icon  to have the entire screen dedicated to Sheet View. To return to the normal view, tap on the  icon.

You may change the order of Features in a Feature Topic by highlighting the Feature record in the Sheet View and then using the , ,  and  icons.

To delete a Feature, first highlight it then tap the **Recycle Bin** icon .

Caution: Always make sure you really want to delete a Feature before confirming the deletion action. **A deleted Feature cannot be recovered.**

Feature Attribution

Sheet View provides a convenient way for you to add or change the description for each Feature record. You may edit the displayed Value if it is not a Value computed by using a Formula, or a Value for a built-in Attribute (such as ID and Area_Acres).


To change a Value displayed in a cell of the Sheet View, double-tap on the cell then type over the existing data.

For the **Plot** Topic in mycorners.pmp go ahead and enter the price for each plot in Sheet View.

Notice how the "Area_Acre" field is automatically populated with the acreage of the plots. Also, as soon as you have entered a value for the "Price" Attribute, the price per acre is automatically computed and displayed in the "Price/Acre" column. This is because you have previously entered the applicable formula for the Price/Acre Attribute.

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Feature Properties

With a Feature selected in the Map View, you may tap the Feature Properties icon  to view the relevant information.



A number of pages are provided for displaying the Feature properties.

Tap on the **Coordinates** button to see the Latitude-Longitude -Elevation information for the Feature. MSL is the Mean-Sea-Level value, and HAE is the elevation referenced to the ellipsoid.

Tap on the **Attribute** button to see the Attribute/Value information for the Feature.

For a Line or Area Feature, tap on the **Area/Length** button to see the line length or the perimeter and acreage of the area in the currently active units of measurement.

Tap on the **Photos** button to view any photos attached to the Feature.

Assigning a Feature Symbol or Pattern

By default, a Feature added to a Topic will assume the same symbol and color as those for the Topic. However, you may use a different symbol to represent an individual Feature if you choose to do so.

On the **Coordinates** page of the Feature Properties screen for the selected Feature, you may pick a symbol or pattern and a display color after clicking on the **Pattern** button. You may also specify a line style as well as the color and size for the border of an Area Feature.

After making the desired changes, click on the **OK** button to accept the settings.

Area Transparency

You can adjust the transparency of an Area Feature within the Area Pattern Dialog.

To do so, simply enter a percentage value into the **Transparency** field, or tap the little arrows to scroll either way.


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)

For example, in **mycorners.pmp** job, tap on one of the two plots then tap on  and mark the **Show Area label** checkbox. Do the same for the other plot.


You can change the size and color of these labels by using **Main Menu - Setup - Feature Labels**.

Edit Feature Attribution

If a Feature has Attributes associated with it, the Attributes and the corresponding Values will be automatically displayed when you tap the **Attribute** tab. To change the Value for an Attribute, double-tap that cell then type over any existing Value. Alternatively, place the cursor at the appropriate position then change a few characters as needed.


In the **View mode**, with the  icon displayed, the cells are not editable until you double-tap on them. To switch to the **Edit mode**, represented by a  icon, tap on the  icon. In the **Edit mode**, each cell is ready to receive input unless that Attribute is non-editable, such as a built-in Attribute or an Attribute with a Formula defined for it.

Auto Label Text Setup

With an Auto Label selected in the Map View, you may tap the Feature Properties icon  to view the relevant information.

You may change the label properties such as the font size and orientation. Specify the label orientation in degrees in the clockwise direction.

Attach Photos to Feature

To attach a photo to a Feature, first tap on the displayed Feature to highlight it then tap on the Feature Properties icon . Then tap on the **Photos** button.

You may select one or more photos from your Photo Library or from the Documents folder for this app. Or, you may tap the **Camera** button to take a snapshot using your iPad. After you have confirmed to save the photo, it will be displayed in the photo window.



If a Feature has photos attached to it, any time you wish to view the photos you can call up the **Feature Properties** screen, tap on the Photos button then tap on **View Photos**.

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Create Deed Calls

This app will automatically generate a list of directions and distances describing a Line Feature or the boundaries of an Area Feature. This list is referred to as the deed calls.

In addition, this app will let you create a Line Feature or an Area Feature by entering the deed calls for that Feature. This means you will be able to get a drawing of a parcel of land by using the directions and distances provided in the legal description of that property.

Viewing the Deed Calls for a Line or Area Feature

Please open the sample job named **cvoarea.pmp** and save it as **cvoarea1.pmp**.

Use **Main Menu - Close Map** to turn off the map.

Tap on the purple SPRAY AREA1 to select it. Tap the down arrow for the **Map Tools** menu then select **View Deed Calls**. (If you did not select a Line or Area Feature before tapped the pull-down arrow for the **Map Tools** menu, you would have seen the Create Deed Calls function listed.)

The first node is highlighted in green color. Its coordinates are shown in the **Lat** and **Lon** boxes.

Tap on the **Calls** tab to view the deed calls for the selected area. You may scroll

the deed call records up or down.

To view the details of the currently highlighted call record, double-tap on that record or tap the **Edit** button. In landscape mode, you will need to scroll to see the Edit button.

Tap the **Calls List** button from the editing screen to return to the list of deed call records.

Tap the **Back** button to return to the main Map View.

Entering Deed Calls to Create a Line or Area Feature

The following example illustrates the procedure for entering bearing and distance calls for each segment of a boundary to create the deed drawing.

First, let's create a new job named **mydc.pmp** and set **Map** to **Show Satellite**.

For this example, we will be using **US Feet** as the distance unit, and we will be entering **DMS** angles in the **BEARING** mode. Please call up **Menu - Setup - Coordinate System** if you need to change the distance unit. Use **Menu - Setup - Elevation and Angle** to set up the angle unit and system.

Now tap the pull-down arrow for the **Map Tools** menu then select **Create Deed Calls**. (If you had selected a Line or Area Feature then tapped the pull-down arrow for the **Map Tools** menu, you would have seen View Deed Calls function listed.)

As we will be entering the deed calls for a closed Area Feature, leave the **Area** tab highlighted. If you were entering the deed calls for a Line Feature, then tap on the **Line** tab to select it.

We will use the default **Topic Name** "DeedCall". If you wish, you could tap on the **Pattern** button to change the line style for the line plot or the fill pattern for the area plot..

In the **First Node** section, enter **44°11'49.773"N** into the **Lat:** box, and enter **123°30'48.818"W** into the **Lon:** box. The node that shows up at the southwest corner of the plot will be our point of beginning.

The First Node is the reference point for the entire deed plot. If you change its coordinates, the deed plot will be translated to the new location.

We will leave the **Orientation** field at 0. If you enter an angle value into the Orientation field, the entire deed plot will be rotated by that amount. Therefore, this functionality could be used to re-orient a completed deed plot to line up with the background map. It will also be handy for entering deed calls that refer to the magnetic north.

Tap the **Calls** tab to go to the page that lists the existing deed calls records. Initially there are no records shown.

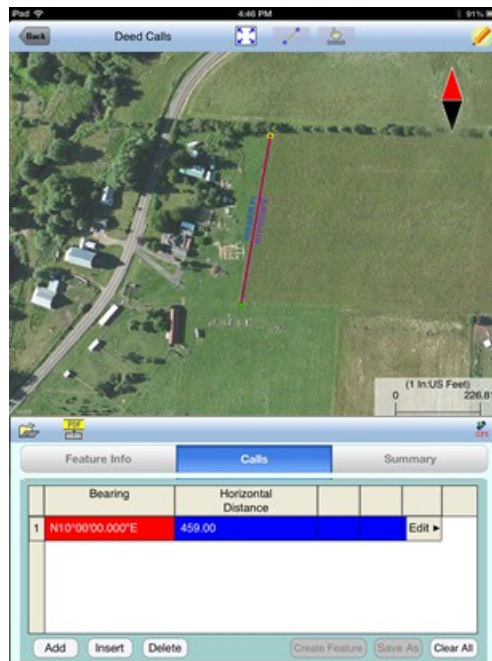
Tap the **Add** button to add a new call record and display the data entry screen.



First, specify the type of segment you will be adding. Choose between **Line Segment** for straight lines or **Arc Segment** to define an arc.

Our first call is a straight **Line Segment**. We enter the horizontal distance of 459 US Ft from the **green** starting point and also specify the bearing of N 10 E.

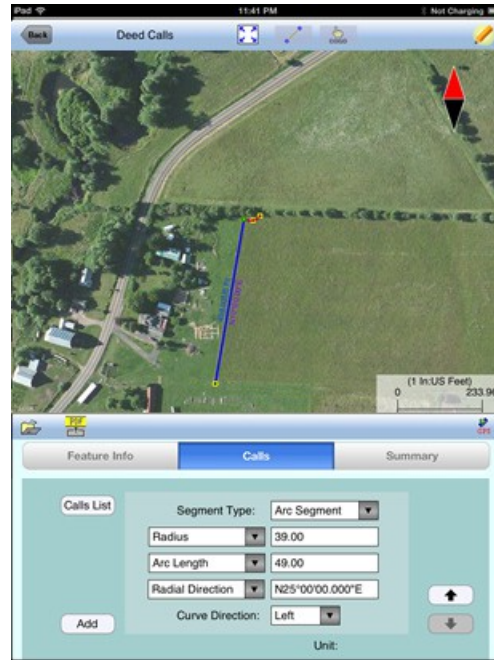
Tap the **Calls List** button to return to the listing of the Deed Calls records.



If you need to change the data entered for any record, simply tap the **Edit** button for that record to call up the data entry screen then enter the correct data. In landscape mode, you will need to scroll to see the Edit button.

Tap **Add** and enter an Arc Segment as shown below. Tap the pull-down arrow for

each field to select the appropriate option.



For an Arc Segment, specify the size and length of the arc by entering a combination of the **Radius** and one of the following: **Arc Length**, **Chord Length**, **Central Angle**. Also specify the orientation of the curve by entering the **Chord Direction**, the **Tangent Direction** or the **Radial Direction** (from the first node of arc to the center of the circle, of which the arc is a part). Select the **Continuous** option if the curve is to continue in the direction of the last defined curve or line segment. Finally, specify the **Curve Direction** to indicate whether the arc turns left or right.

Tap the **Calls List** button to return to the listing of the Deed Calls records.

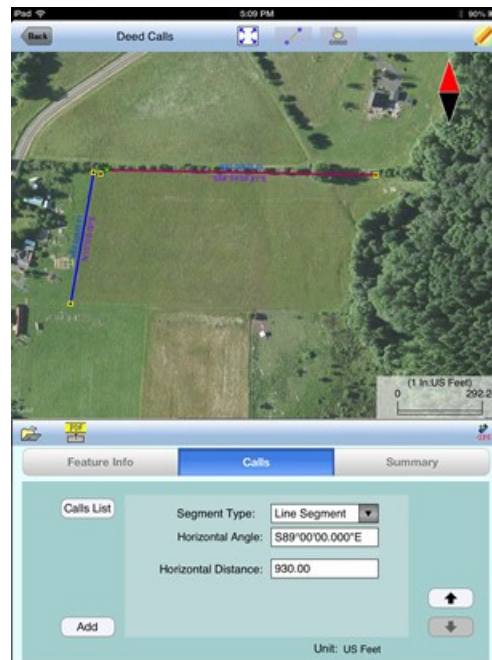


The last entered segment is highlighted in red in the graphical view.

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. To fit the drawing to the screen, simply tap the **Zoom-Fit** icon. 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.

As there could be line segments as well as curve segments in your deed drawing, please note that the column titles for the list of deed calls records will correspond to the highlighted record.

Now tap the **Add** button to add a Line Segment as shown below:




If you wish to add a new segment, you could as well tap the **Add** button on this screen. This button will permit you to quickly add one segment after another without having to go back to the previous screen.

We will tap the **Calls List** button to review all the records that we have stored so far:



Whenever the Deed Calls records are displayed, you may tap the **Insert** button to insert a record before the highlighted record, tap the **Delete** button to delete the highlighted record, or tap the **Clear All** button to clear all existing deed calls from the list and start a new deed call drawing.

Caution: Make sure you really want to delete a record or clear all records before confirming to do so. Deleted records cannot be recovered.

When you tap the lit **Edit** icon  to turn it off, any drawing you have made so far will be displayed in **full screen**.

Complete the drawing by entering the following data. Remember to tap the **Add** button before entering a new call, and pay attention to the N, S, E, W designation.

Line Segment

Horizontal Distance: 172

Horizontal Angle: S82°00'00.000"E

Line Segment

Horizontal Distance: 120

Horizontal Angle: S60°00'00.000"W

Arc Segment

Radius: 200

Arc Length: 170

Chord Direction: S58°00'00.000"W

Curve Direction: Left

Arc Segment

Radius: 170

Arc Length: 188

Continuous

Curve Direction: Left

Arc Segment

Radius: 90

Arc Length: 185

Continuous

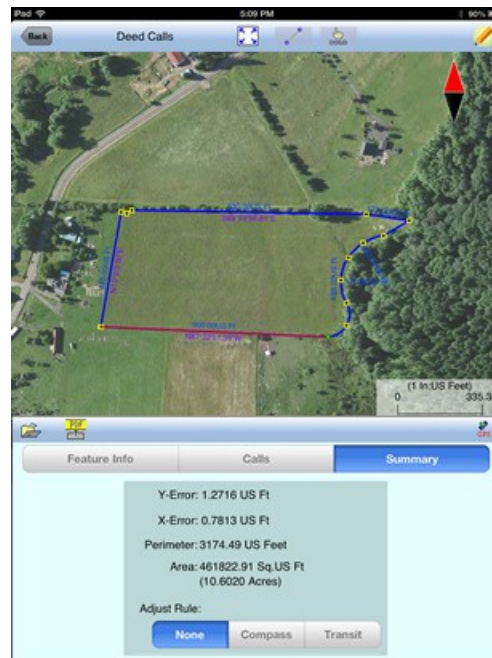
Curve Direction: Right

Line Segment

Horizontal Distance: 900

Horizontal Angle: N87°23'00.000"W


Tap the **Summary** button to see the closure errors and the perimeter and area that you would get when the figure is closed.



If this is satisfactory, tap the **Back** button then confirm to create the Feature.

If you are unsure about the last call and want the **Deed Calls - Area - Perimeter** software to automatically close the loop for you, simply tap the **Auto-close** button. A Line Segment will be generated to snap to the First Node, and the deed plot will be represented as an area. Notice how the closed area is filled with the area pattern you've specified for this deed calls job.

Editing the Deed Calls

To modify the deed calls for the Area Feature that you have just created, first tap on that Area Feature in Map View then tap the **Deed Calls** icon .

You may change the location of the Feature by changing the position of the First Node. If there are points or nodes in your job, you could tap the **Pick** button then select one of them as the first node.

You may change the area pattern and color for the Area Feature represented by the

deed calls.

On the Calls Page, you may **Add**, **Insert** or **Delete** a deed call record.

Be careful with the **Clear All** button as this will delete all the deed call records.

To edit a record, double-tap on it or tap the **Edit** button. (In landscape mode, you will need to scroll to see the Edit button.) Make sure you know what you are doing before changing the distance or angle values.

If the data viewed is not the first or the last deed calls record, the **UP** and/or **DOWN** arrows will be active. You may tap the appropriate button to view or change the previous or next data record, if you wish.

To return to the display of the deed call records, tap the **Calls List** button from the editing screen. From this page you may tap the **Save As** button to save the deed calls to a text file. Enter a names such as "mycvoarea". The app will automatically add the file name extension **.dcf** (deed calls file).

If you intend to have the changes applied to the original Area Feature, then tap the **Update Feature** button. Otherwise, tap the **Back** button to return to the main Map View.


If you are at the last deed calls record, you may tap the **Add** button to add a new call.

To return to the list of deed calls records, tap the **Back** button.

Saving the Deed Calls to a Text File

To save the deed calls to a file, tap the **Save As** button on the page listing the Deed Calls records and specify the name of the file. The file extension is ***.dcf (deed call file)**. This is a text file that you will be able to open by using a text editor, such as WordPad.

Opening a Deed Calls Text File

You may open a .dcf file that you have previously created by using this app or a text editor. To open the deed calls file, tap the **Open File** icon  on the **Deed Calls** page.

Then you may view and edit the deed calls, re-save them to a .dcf file, or create a new Feature based on the deed calls.

If you would like to prepare a .dcf file outside of this app, you will need to place the data elements in the proper format, as shown in the following example. The bare minimum parts of the contents of the .dcf file are the sections titled **[Record_Unit]** and **[Records]**. You could also include the section titled **[Coordinate_System]**. Alternatively, you could select the proper coordinate system and unit in the app, enter the first node location on the Deed Calls Feature Information page, then import the .dcf file that only contains the **[Record_Unit]**

and [Records] sections.

[Coordinate_System]

// Coordinate System and the First Node

Coordinate_System: LLA

Datum: WGS84(1150)/ITRF00

First_Node_Unit: US_Feet

First_Node_Loc: 123°07'29.734"W 44°32'50.091"N 71.373

MSL: 71.373 US_Feet

Orientation: 0.0000

[Record_Unit]

Length_Unit: US_Feet

Angle_Unit: DMS

Angle_System: Bearing

[Records]

N08°48'44.367"W 403.054

N74°34'10.512"E 1219.859

S51°24'55.310"E 16.115

S57°40'52.555"W 1333.281

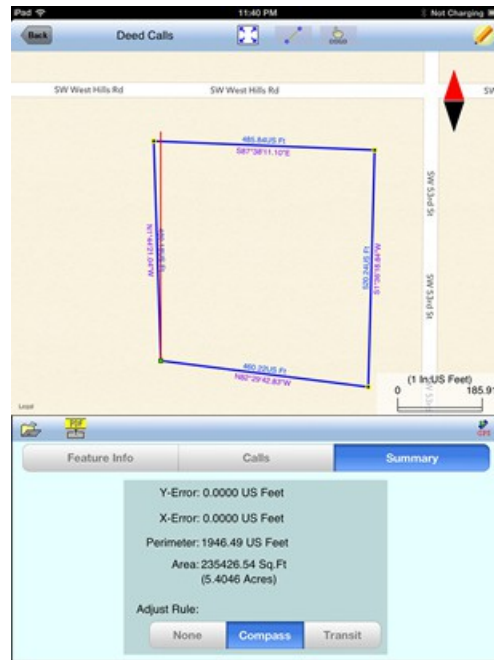
Adjusting a Deed Plot

If your deed plot does not close exactly, you may opt to make an adjustment by using the Compass Rule or the Transit Rule.

As an example, create a new job and select **Create Deed Calls**. On the Deed Calls page, tap on the **File Open** icon then select **adjust.dcf** to load the deed calls from that file.




Tap the **Summary** tab to see the (exaggerated) closure errors. Tap on the **Compass** button or the **Transit** button to see the corresponding adjustment result.



When you tap the **Back** button, the app will ask you if you wish to create a Feature based on the selected adjustment method. After you select **Yes**, the newly created Feature will reflect the adjusted deed plot. The deed calls themselves are not altered. Later, you may revert back to the unadjusted deed plot or select a different adjustment method, if you wish.

Saving the Deed Plot and Deed Calls to PDF

You may use the  tool to export to a PDF file the Feature shape and deed calls for the Feature with which you are currently working. This PDF file will not contain information about any other Features in the active Job file.



If you open a .dcf file on the Deed Calls Page and immediately export the data to PDF, the PDF file will show the deed plot preview and the deed call records.

Please read the section titled [Export to PDF](#) for details about viewing an existing PDF file and overwriting a PDF file.

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Create Buffers

This app will allow you to create a buffer zone around a **Point Feature**, along a **Line Feature** or along the perimeter of an **Area Feature**. You may also 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.

To use this function, tap on the **Utilities menu icon**  then select **Create Buffer** . The Buffering dialog will be displayed.


Suppose we wish to map the area to be mowed between the fence in **mycorneres.pmp** and the stand of trees on its left side. Instead of digitizing this

strip of land, we could create a 60 ft wide buffer zone for the **Fence001** Line Feature. Please set the distance unit to **Feet** for this example. (If you are working with meters then use 18.29 Meters for the buffer interval.)


With the cursor at the **Source** box, tap on the **Fence001** Line Feature to select it.

Enter 60 as the **Buffer Interval**. Tap on the button showing "**Left**". Leave the Resultant Topic as "Buffer".

We will keep the checkbox for **Entire Feature** marked because we want to create a buffer for the full length of our fence. If you wish to buffer just a part of a Line Feature, you could unmark the checkbox for **Entire Feature** then specify the starting and ending nodes.

When you tap the **Solve** icon , the buffer is created. Tap the **Back** button to return to the main Map View.



Tap on the buffer zone to highlight it then tap the Feature Properties icon  to get to its **Area and Length** page and view its perimeter and area values.


You can use a similar procedure to create a single buffer or multiple buffers around an **Area Feature**.

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 on an Area Feature, 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 turn off the **Equal Intervals** checkbox then 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 create overlapping buffers, the newly created buffer will lie below the one created earlier.

You may find that you are unable to select an inside buffer for an Area Feature and view its area by tapping on the buffer area. This is because the inside buffers are placed underneath the Area Feature. You can reveal an obscured Feature in the following ways:

1. Each Feature belongs to a Feature Topic layer. You can move a Topic upward by tapping the Topic Menu, selecting **Move Topic**, then dragging the Topic up above the one obscuring it.
2. You could turn off the Topic layers obscuring the desired Topic layer.
3. Within a Topic layer, you can change the order of the Features by turning on the Sheet View, selecting the record for a Feature and using the “To Front”, “To Back”, “Forward” and “Backward” buttons.

Here is another way to view the area for a buffer that is covered by an Area Feature or another buffer. Turn on Topic View and select the Buffer Topic. Then turn on **Sheet View** to display the buffer records. Select the desired buffer record, and it will be highlighted in Map View. Then you can tap the Feature Properties icon  to get to its **Area and Length** page and view its perimeter and area values. Of course, you could also add the Area_Acres or the Area_Ha built-in Attribute to the Buffer Topic so that the buffer areas are automatically displayed in Sheet View.

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Subdivide Areas


If you have not yet done so, please open the sample job named **cvoarea.pmp** and save it as **mycvoarea.pmp**. We will use mycvoarea.pmp to illustrate the **Hinge Cut**, **Direction Cut** and **Split** methods for dividing up an area.

Select the "**Show Standard**" Map mode, and select **Meters** as the distance Unit for this job.

Division by Hinge Cut

In the center of the map is a spray area with the Feature ID SPRAY AREA1. Tap

on that Area Feature to highlight it.


From the **Utilities Menu** select **Hinge Cut** .

The Hinge Cut method will let you start the division line at any node on the Target Area Feature and specify the size of area to cut out.


Enter "8" into the **Hinge Node #** field then tap the **Enter** key on the pop-up keyboard. You will see the selected node indicated by a little green square. Enter "63801.84" into the **Cut Area** field.




In most cases, there will be two solutions that satisfy the specified conditions. To get the cut-out area that includes the node preceding the hinge node, select **Previous**. If it's the other solution that you desire, then select **Next**. You can use the displayed result to help you decide.

With the **Previous** tab highlighted, tap the **Solve** icon  to compute the solution. The following screen will be displayed.



If you've made an error and wish to undo the Hinge Cut, tap the **Reset** icon .

If you are sure this is how the original area should be divided, then tap the **Save Result** icon .

The app will automatically assign the next available ID(s) to the newly created Feature(s). If you wish to assign a different set of IDs to the new Features, you may tap on the Starting ID field then enter the first ID number, such as "SEC1". The second newly created Area Feature will assume the ID "SEC2", and so on.

Let's enter "SEC1" as the Starting ID.

Tap on the OK button to finalize the hinge cut and store the newly created Features, or tap on the **Cancel** button to abort this action. Let's tap on **OK**.


Please note that **once the area division has been finalized, the original area cannot be recovered**. Therefore, it is a good idea to save a copy of the original job file under a different name before splitting an area.

Tap the **Back** button to return to the main Map View. Here, you may tap on a newly created Area Feature and use the **Feature Properties** tool to rename it or to assign a different area pattern to it.

Division by Direction Cut

As described under Hinge Cut, we have cut SPRAY AREA1 in **mycvoarea.pmp** into two sections, SEC1 and SEC2. Suppose we wish to divide the section on the west side (**SEC1**) into **three equal parts** and have the division lines go parallel to the eastern border of this section. For this, we will use the Direction Cut method, which lets you specify the direction of the division line and the size of the area to be cut out.

First, tap on the target area, SEC1, to highlight it in the main Map View.

From the **Utilities Menu** select **Direction Cut** .






In the above screen, the ID of the Target Feature is SEC1. This area is highlighted in the displayed view. If it is not the correct one, you may tap on the intended target area to select it.

As we will be creating more than one sub-areas, select **Multiple** for the Mode field.

If you know the exact orientation of the division line, you may enter the known value.

For this exercise, use your finger to orient the **Direction Guideline** in the desired direction, i.e. parallel to the eastern border of the target area.

If you wish to zoom into the map, you must first turn off the Cogo mode by tapping on the  icon.

Alternatively, you may specify the direction for the cut by tapping on  then selecting two existing Points or nodes. For example, we could use this tool and select the two terminal nodes of the line segment representing the eastern boundary of our target area. If you selected an incorrect Point or node as the First Point, you may tap on it again to unselect it. Similarly, you may tap on the currently selected Second Point to unselect it. To disable this mode, tap on  gain.

After aligning the Direction Guideline with the eastern border of the target area, enter "**21267.6**" into the **Cut Area** field. If you need to adjust the direction again, then tap on the Direction field to activate it.


In most cases, there will be two different solutions that satisfy the specified conditions. To get the cut-out area that starts from one side of the target area, select **Side 1**. To get the cut-out area that starts from the other side of the target area, select **Side 2**.


As the Cut Area we have specified for this example will divide the target area into nearly equal thirds, the remaining area after the cut is close to zero. Therefore, it is immaterial whether you select Side 1 or Side 2 for this example.

Tap the **Solve** icon  to compute the solution.

The following screen shows that the target area will be divided into three equal pieces.



If you've made an error and wish to undo the Direction Cut, tap the **Reset** icon .

If you are sure this is how the original area should be divided, tap the **Save Result** icon .

The app will automatically assign the next available ID(s) to the newly created Feature(s). If you wish to assign a different set of IDs to the new Features, you may tap the Starting ID field then enter the first ID number, such as "PLOT1". The second newly created Area Feature will assume the ID "PLOT2", and so on.

Tap on the OK button to finalize the direction cut and store the newly created Features, or tap on the **Cancel** button to abort this action.

Please note that **once the area division has been finalized, the original area cannot be recovered**. Therefore, it is a good idea to save a copy of the original job file under a different name before splitting an area.


Tap the **Back** button to return to the main Map View. Here, you may tap on a newly created Area Feature and use the **Feature Properties** tool to rename it or to assign a different area pattern to it.

Division by Splitting

You may split an Area Feature along a Split-Line. Let's continue to use **mycvoarea.pmp** as our sample file.

Tap on the area named **SEC2** to select it.


From the **Utilities Menu** select **Split**  to display the Split Area screen.


Opt to **Digitize** a division line to split this area into two areas. The **Node tool** 

will be automatically activated to help with the digitization.

Tap on the **Snap to Node** tool to turn it on. Move the Node tool to the node close to where the road enters this area on the west side then tap in the center of the Node Tool.



Tap on  to turn it off. Zoom into the map to get a better view of the road then move the Node tool along the northern border of the road. Tap at appropriate locations to create the division line.

If the Crosshairs have moved off the screen, you could tap on the  icon to bring the Crosshairs back to the center of the screen.

Make sure the division line ends on the border or extends beyond it.



Tap the **Split** button to view the result.

If you've made an error, you could tap the **Undo** button to erase the division line and start over in this screen.

If the division result is what you want, then **select the "heir" to finalize the split**. To do so, tap on one of the areas that is to assume the same Feature ID and area pattern as the original area. The other portion will be assigned a different ID and area pattern.

Please note that **once the area division has been finalized, the original area cannot be recovered**. Therefore, it is a good idea to save a copy of the original job file under a different name before splitting an area.


If you wish to use an existing Line Feature as the division line for splitting an area, then tap on the **Existing Line** button in the Split Area screen. The selected Split-Line must pass through and extend beyond the perimeter of the area to be divided.

Tap the **Back** button to return to the main Map View. Here, you may tap on a newly created Area Feature and use the **Feature Properties** tool to rename it or to assign a different area pattern to it.

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Combine Areas

You can use the Combine Areas function to combine two adjacent Area Features to form a larger Area Feature. For example, if you divided an Area Feature into two subareas by mistake, you could recombine them.

To combine two Area Features, first select **Combine**  from the **Utilities** menu. Select the two source areas then tap the **Combine** button.

For the **Topic Name** field select the appropriate topic into which to store the combined area.

You may change the displayed **Feature ID** and the area pattern if you wish.


If there are gaps between the two areas to be combined, they will be displayed and you will be given the option to delete those **Gaps**.

If both of the source areas belong to the Topic selected for the resultant area, then the **Copy values from Area1** checkbox will be displayed. You may mark this checkbox if you wish the combined Area Feature to assume the same Attribute Values as the first source area. If only one of the source areas belongs to the Topic selected for the resultant area, then the **Copy values from Area** checkbox will be displayed for that source area. If neither source area belongs to the Topic selected for the resultant area, then the **Copy values from Area** checkbox will not be displayed.



Mark the **Delete original Areas** checkbox if you wish to have the original Area Features deleted and only retain the combined Area Feature. Otherwise, the newly created combined Area Feature will be placed on top of the original source Area Features, and you could later delete the combined Area Features to reveal the original Area Feature again.


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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 **Utilites** 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.

If your device has GPS capability, you could tap the **GPS** icon  to turn on GPS then tap the **Pick GPS** icon  to add a node for the line to be measured.

Tap on the **Snap to Node** icon  to turn it on when you wish to snap to an existing Point or node by tapping in its vicinity.

To back-step, tap the **Undo** icon . To delete all the nodes made in this measurement session, tap the **Reset** button .


Please note that the Measure Distance tool will not retain the **temporary** shape you have delineated 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 **Utilities** 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.

If your device has GPS capability, you could tap the **GPS** icon  to turn on GPS then tap the **Pick GPS** icon to add a node for the area to be measured.

Tap on the **Snap to Node** icon  to turn it on when you wish to snap to an existing Point or node by tapping in its vicinity.


To back-step, tap the **Undo** icon . To delete all the nodes made in this measurement session, tap the **Reset** button .

Please note that the Measure Area tool will not retain the **temporary** shape you have delineated for computing the area.

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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Locate a Point by Address

To look for a location on the displayed built-in Map by address or coordinates, tap on the pull-down arrow of the **Utilities Menu** icon  then select **Locate a Point by Address**. This function will only work when **Map** is turned on.

If you know the address of the location of interest, tap the **By Address** tab then enter the address.


If you know the coordinates of the location of interest, tap the **By Coordinate** tab then enter the coordinates. Make sure you have entered the correct N/S and E/W designations.

After tapping the **Go** button, you will see the target location marked on the screen. You may search additional locations by address or by coordinates. All the locations you searched for will stay marked before you exit this screen.

If you can recognize the desired location on the displayed Map, you could select that location by tapping the **Pick** icon  then tapping on the target location. The

relevant address information will pop up on the screen, and when you tap the **Go** button, that location will be marked. You can view its coordinates by tapping the **By Coordinate** tab.

When you tap on a marked location, the corresponding marker will turn orange. If you wish, you may save that location as a Point Feature by tapping on the Save

Result icon . You may change the Feature ID and the symbol used to represent the new point before tapping on **OK** to create the Point Feature.


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

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Export to PDF

To export the job data to a PDF file, tap the **Main Menu** icon, select **Job** then select **Export to PDF**.


You may accept the displayed default name in the **FileName** field for the PDF output file, or you may type over it the name you wish to assign to the PDF file. Please pay attention to the file name in the **FileName** field so as to avoid unintentionally overwriting an existing file.

After you have tapped on the **OK** button to complete the PDF export, the contents of the PDF file will be displayed. The first page will show the drawing of the Features as they are displayed on the screen. If you wish to have all Features included in the drawing then first fit them all on the screen by tapping the Zoom-Fit icon .

The additional page(s) will show the boundary coordinates and areas of the Area Features as well as the coordinates of the Point Features or the starting and ending nodes of the Line Features.

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 tap on OK.**

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, instead of the **OK** button, you will see a **View** button. Tap the **View** button 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 **OK** to overwrite the file.

If you have an AriPrint 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 this

app.

To delete a PDF file, use the iTunes® program to access the Documents folder for this app then select the file and hit the **Delete** button on your desk-top computer. **A deleted file cannot be recovered.**

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Email Files

You may email Job files (*.pmp), PDF files (*.pdf), DXF files (*.dxf), Deed Calls files (*.dcf) and Photo files that are stored in the Documents folder for this app or in your iCloud storage. To do so, first tap the **Main Menu** icon and select **Email Files**.

If the Files are in the iCloud® Storage, then mark the **On Cloud** checkbox.

Enter the destination email address and select the file type. The files listed in the displayed table depends on the file type selected. Mark the checkbox for the files you wish to send, then tap the **Send** button.

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

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Get/Send Files via FTP

This app will let you transfer files over the Internet using **File Transfer Protocol (FTP)**. FTP file transfer requires a FTP server and a ftp client. This app will use an **FTP client** to send or get files to or from the PC running the FTP server.

To access the FTP function, select **Main Menu/Job** then select **FTP**.

Enter the IP address of the ftp site you want to connect to. If a user name and password for accessing the ftp site is required, then enter them into the corresponding boxes. For an FTP site that provides anonymous FTP access, simply mark the Anonymous checkbox, and the User Name will be automatically filled in with "anonymous".

You may select the FTP Path and have it point to the desired folder on the PC. The files on the iPad and the files on the ftp site will be listed separately.

Select the files you wish to send from one side to the other then tap the corresponding large arrow button to complete the transfer.

If the Files for your device are in iCloud® Storage, then mark the **On Cloud** checkbox.

Some versions of CMT PC mapping software, such as PC-GIS X, provide an **FTP Server** to let an FTP Client get or send files from your computer. For example, you

may use Deed Calls Pro to transfer files to and from your PC via FTP.

The steps for making an FTP file transfer using the CMT FTP Server are as follows:

1. In PC-GIS X run **Utilities/FTP Server**, and select the IP if you have more than one network card. The FTP Client will connect with the FTP Server via this IP. If you don't want to allow the client to login as Anonymous, you should set User Name and Password.
2. Specify the FTP Path, i.e. the desired folder on the PC.
3. Click the "Start" button to start the FTP server.
4. In the iOS app enable the FTP function under Menu/Job then log in to the ftp site.
5. In the iOS app select the files to be sent, then tap the corresponding arrow button.

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