

USER'S GUIDE

SOLO Office – Forest Edition®



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Introduction

SOLO Office – Forest Edition is the Windows-based companion product for SOLO Forest. It is designed to serve as a project management tool to assist with deploying needed work to the field via SOLO Forest.

This manual will describe the functions found within SOLO Office – Forest Edition, including:

- Creating custom Feature Files to use as field data collection templates
- Creating custom Zone files to project your collected data in real time
- Preparing basemaps and raster images for field use
- Creating Waypoint files for navigation
- Transferring files between your data collector and your desktop PC
- Viewing and editing collected data, basemaps and raster images
- Printing your projects
- Exporting data in several GIS and CAD formats

This manual will also describe the user interface of SOLO Office – Forest Edition, including zooming and panning the Map View; labeling and applying colors and symbols to basemaps and collected data; and turning on and off display options.

The functions available in SOLO Office – Forest Edition will be described in the order in which they are presented in the pull-down menus and shortcut icons, with one section devoted to each pull-down menu.

System Requirements

SOLO Office – Forest Edition requires a 486 MHz or higher processor running Microsoft Windows XP or later. For communication with your data collector, you will need an available serial (COM) port or USB port that is not being used by any other devices.

Software Installation

1. Be sure Microsoft ActiveSync (Windows XP) or Windows Mobile Device Center (Windows 7 and up) is installed and running on the desktop PC before SOLO Office is installed. If Active Sync/Mobile Device Center is not installed, you will get a 'CEUTIL.dll not found' error when you try to run SOLO Office.
2. To install SOLO Office, run the .msi file.

Starting the Program

1. The procedure to start SOLO Office - Forest Edition will vary depending on the type of handheld where it is installed. Use one of the following methods:
 - Choose **Start > All Programs > Trimble > SOLO Office – FE**
 - Double tap the SOLO Office – Forest Edition shortcut on the desktop.
2. When you start SOLO Office - Forest Edition for the first time, you will be notified that your copy of SOLO Office - Forest Edition has not been registered. At this point you can tap the **Register** button and follow the instructions below, or tap the **Demo** button and run it in demo mode.

Registering the Program

When you tap the 'Register' button, the **Product Authorization** screen will be displayed. The serial number for the installed copy of SOLO Office - Forest Edition will be displayed in the **SOLO Serial Number** field. Email (forestrysupport@trimble.com) Trimble with this serial number, a copy of your invoice to receive the corresponding authorization numbers. You can then enter the authorization number to register SOLO Office - Forest Edition for full use.

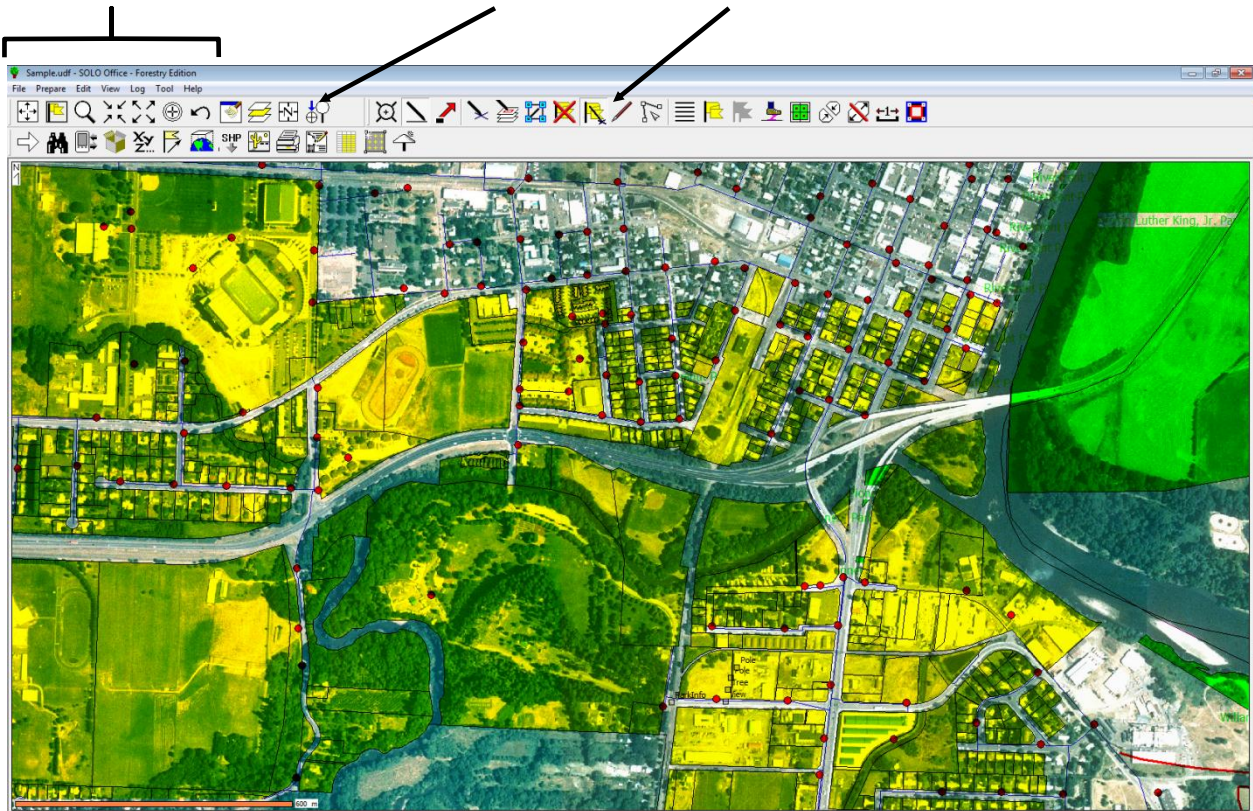
SOLO Office - Forest Edition Main Screen

The Main SOLO Office screen contains the Map View and is where you will initiate all of the data manipulation and management functions in SOLO Office. The Map View will also be where you display your collected points, waypoints, basemap layers and raster images.

Pull-down Menus

Zoom Toolbar

Mode Toolbar



The File Menu

The functions contained in the file menu allow you to open or create projects, export your project data and run optional program modules. This section discusses the SOLO Office - Forest Edition functions that are found under the **File** menu.

File > New UDF Project

Many of the functions provided within SOLO Office operate on a project level. Projects can be created in SOLO Office or they can be created on your field data collector and uploaded to SOLO Office.

To create a new project in SOLO Office, select the File > New UDF Project menu option. The Create Project File dialog box will be displayed. You can use the standard Windows navigation functions to specify or create the folder in which you wish to create the job, then enter a name for the project in the Name field and click the OK button. The default extension of .UDF (Universal Data File) is automatically added to the file name.

When you create a new project, the Settings dialog box will be displayed. This is the dialog box where you configure the user interface and settings for the project. Clicking File > Settings can also access this dialog box.

There are several pages available in the Settings dialog box, which are described in the File > Settings section.

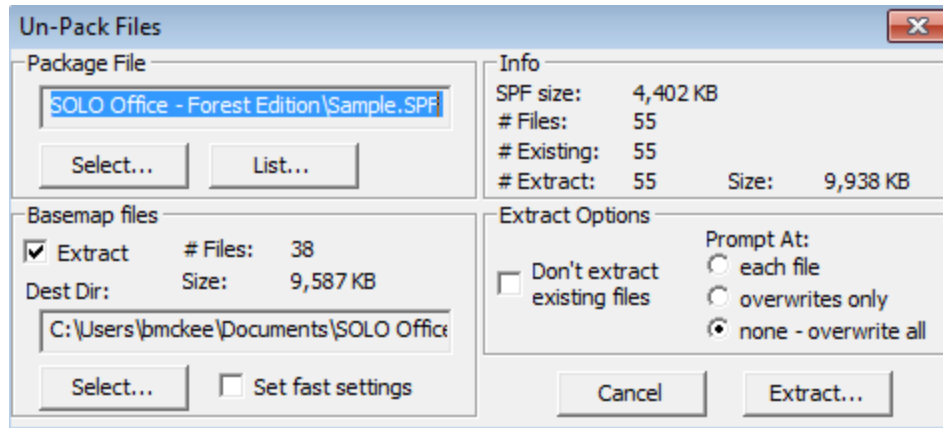
File > Open UDF or SPF

The **File > Open UDF or SPF** menu option allows you to open an existing project file (*.UDF) or a SOLO Package File (*.SPF). SPF files are compressed, self-extracting files that are created in SOLO Office. SPF files can contain basemap layers, raster images, feature files and other associated files.

When you select **File > Open**, a standard Windows **Open** screen is displayed. Use the navigation functions to locate the desired UDF or SPF file, and then double tap on the filename to open the project.

When a project is opened, the selections in the **Settings** screen will be updated to match the settings stored in the existing project.

If you choose to open an SPF file, the Unpack Files screen will be displayed.



This screen is divided into four sections: Package File, Info, Basemap Files, and Extract Options.

Package File

This section displays the name and location of the selected SPF file. To select a different SPF file, tap on the **Select** button. To view the files stored in the selected SPF file, tap on the **List** button.

Extract Basemap Files

This section displays the number of basemap and related files that are stored in the SPF file, the extracted size of those files and the directory to which those files will be extracted.

Uncheck the box labeled “Extract Basemap Files” if you do not wish to extract the basemap and associated files.

Tap on the **Select** button to choose a different destination directory for all of the files in the SPF file to be extracted to.

Check the box labeled “Set Fast Settings” to set the default display options for the basemap files to the fastest settings: black; no fill; line width of 1.

Info

This section displays the SPF file size, the number of files contained in the SPF file, the number of those files that already exist in the destination directory and the number and extraction size of the those files that do not already exist in the destination directory.

Extract Options

This section allows you to set the extraction options for the selected SPF file. The default option is to skip files that already exist in the destination directory. Uncheck the box labeled “Don’t extract existing files” if you wish to overwrite any of the files that already exist in the destination directory.

You may also select how you will be prompted during the extraction option. Select **Each File** to confirm the extraction of every file to be extracted. Select **Overwrite Only** to be prompted only if an existing file will be overwritten. Select **None – Overwrite All** if you do not wish to be prompted.

Tap on the **Cancel** button to close the Un-Pack Files screen and return to the Map View.

Tap the **Extract** button to extract the desired files from the SPF file. After the files are extracted, you will be asked if you wish to open the project that has been extracted.

File > Close UDF Project

The **File > Close UDF Project** menu option closes the current project.

File > Save As

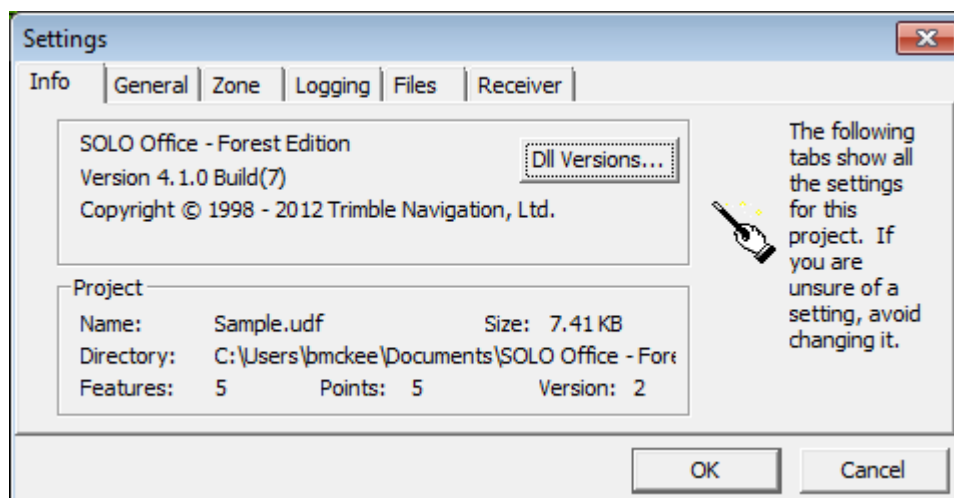
The **File > Save As** menu option allows you to save the current project as a new UDF project with any name provided. Once the project is saved, the new project becomes the current project.

File > Settings...

There are several pages available in the **Settings** screen. These pages are organized like index cards. Tapping on any tab along the top of this screen will open that page. Each page in the **Settings** screen is described below.

Settings: Info

The **Info** page displays the version of the SOLO Office - Forest Edition program and the information for the current project. Tap on the **DLL Versions** button to display the DLL component versions currently being used.



Project name

This field displays the currently opened project.

Size

This field displays the size of the currently opened project.

Version

This field displays the version of the currently opened project.

Directory

This field displays where the project file is stored.

Features

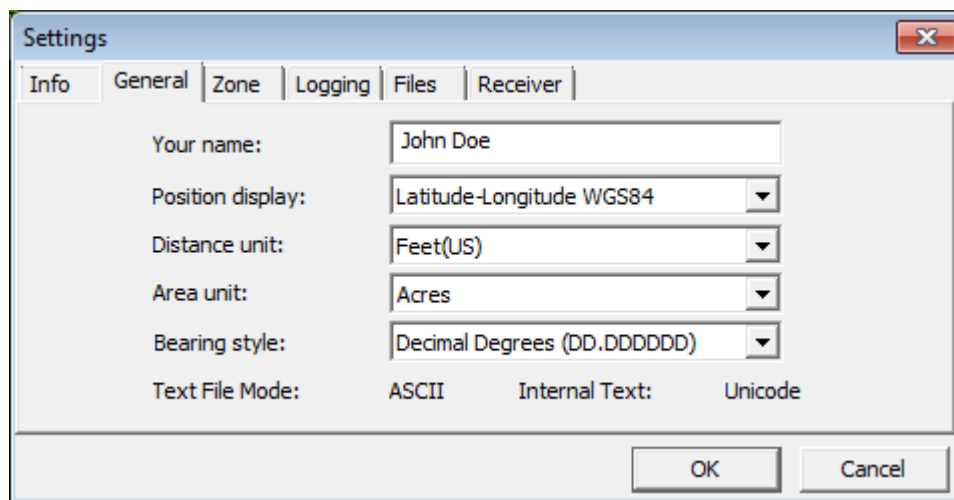
This field shows the number of active and ended features in the project.

Points

This field shows the number of points that have been logged in the current project.

Settings: General

The **General** page is used to set the format for how your position is displayed and the units to use for distance and area calculations.

The image shows a screenshot of a software settings dialog box titled "Settings". It has several tabs: "Info", "General", "Zone", "Logging", "Files", and "Receiver". The "General" tab is currently selected. Inside the "General" tab, there are several configuration options: "Your name:" with a text input field containing "John Doe"; "Position display:" with a dropdown menu showing "Latitude-Longitude WGS84"; "Distance unit:" with a dropdown menu showing "Feet(US)"; "Area unit:" with a dropdown menu showing "Acres"; "Bearing style:" with a dropdown menu showing "Decimal Degrees (DD.DDDDDD)"; and "Text File Mode:" with three radio buttons: "ASCII", "Internal Text", and "Unicode". At the bottom right of the dialog box are "OK" and "Cancel" buttons.

Your name

You can personalize the project by entering your name, or any text in this optional field.

Position Display

Select from Latitude-Longitude WGS84, or Northing-Easting (SPC, UTM or Custom).

Distance unit

Select the units that you want to use when entering and displaying distances from the dropdown list.

Tip: Throughout SOLO Office - Forest Edition, distances are entered in the units selected here. These units can be temporarily overridden to either feet or meters by appending the distance entered with the appropriate units. For example, if the units for the project were set to meters and you wanted to enter 6 feet for a distance, you could enter the distance in any of the following formats:

6 f 6f 6 ft 6ft 6 feet 6feet

Likewise, if the units for the project are set to feet and you wanted to enter 2 meters for a distance, you could enter the distance in any of the following formats:

2 m 2m 2 meter 2meter 2 meters 2meters

The distance entered is then converted to the units configured for the project once the **OK** button is tapped from the current screen.

Area unit

Select the units that you want to use when displaying calculated areas from the dropdown list.

Bearing style

Select between Decimal Degrees and Deg > Min > Sec as the format to use when displaying bearings.

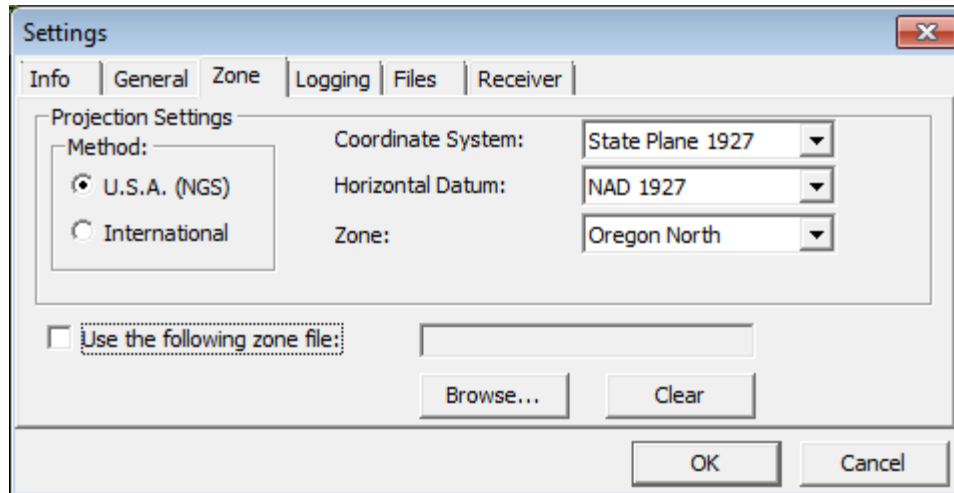
Settings: Zone

If you are unsure of the zone parameter required for your project, or if it is not important that your project's coordinates tie-in with coordinates from another source, simply leave each field in this screen set to their default values.

If you selected to display **Northing-Easting** coordinates from the **General** page, the options from this page will affect both the format for your coordinates and how distances and areas are calculated. If you selected to display **Latitude- Longitude** coordinates from the **General** page, the options from this page will only affect how distances and areas are calculated.

When using a zone file, the settings on this page will have no effect. The only necessary step is to select the correct zone file as described below.

Since the options available in each field will vary depending on the selections made in the previous fields, you should make your selections in the same order that they appear on the screen; **Method**, **Coordinate System**, **Horizontal Datum**, and **Zone**.



Method

Select the projection method that is best for your project. In general, the **U.S.A. (NGS)** option provides more accurate measurements, but is only valid when working within North America. The **International** option is applicable worldwide.

Coordinate System

Select **State Plane 1927**, **State Plane 1983**, or **UTM**. When using **International** for **Method**, **UTM**, **Japanese** and **South African** options are available as built-in coordinate systems. Other coordinate systems can be supported by creating a custom Zone file (.ZON). This is discussed later in this manual.

Horizontal Datum

Select the datum that you want to use for your project. The options available will vary depending on the previous selections that were made. There are no additional steps except with the following option:

High Precision Geodetic Networks (HPGN)

If you want to use any of the HPGN datum definitions, additional files must be transferred to the data collector.

Using Microsoft ActiveSync, copy the appropriate .LOS and .LAS files from the \Program Files\SOLO Office - Forest Edition\GeoData folder, depending on the HPGN datum that will be used, as explained in the following examples.

If you were working in Florida, you would select the **HPGN FL** Horizontal Datum and copy the FLHPGN.LAS and FLHPGN.LOS files to the Data collector.

If you were working in California, you would select the **HPGN CA** Horizontal Datum and copy the CAHPGN.LAS and CAHPGN.LOS to the Data collector.

Zone

Select the zone where you will be working. If the UTM Coordinate System was selected earlier, you can either select your specific longitudinal zone, or the **Natural Zone** option.

When the **Natural Zone** option is selected, SOLO Office - Forest Edition will automatically choose the correct longitudinal zone from the information that is sent from the receiver.

Although it is unlikely, if a situation occurs when using **Natural Zone** where waypoints exist in two longitudinal zones, or if you cross over to another longitudinal zone while collecting data, a warning will be displayed immediately after the error is encountered.

To solve the problem, simply follow the instructions provided in the error screen.

Hemisphere

Select the hemisphere where you will be working. This field is only displayed if you have selected **International** as the Method.

Use the following zone file

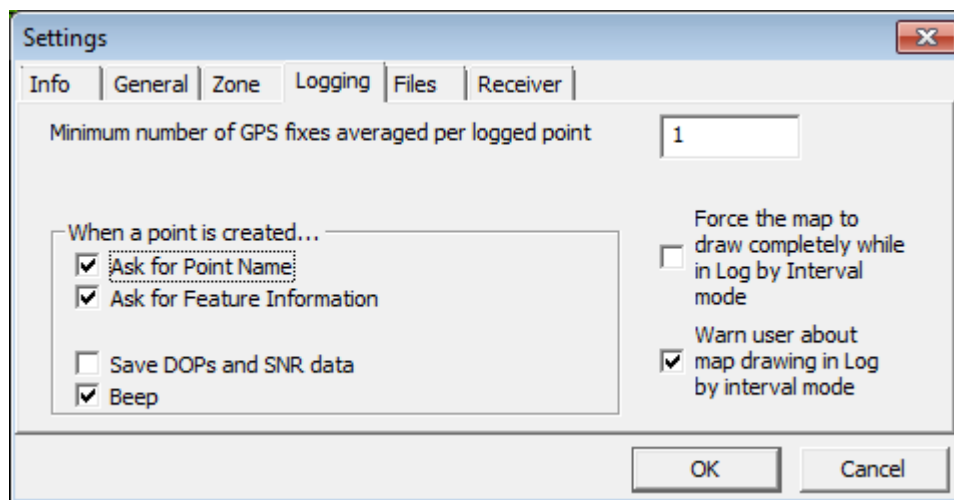
A Zone file (.ZON) can be created using **SOLO Office** and then transferred to the data collector. Zone files contain all of your zone parameters, and can contain custom projection parameters that are not available by using SOLO Forest alone. They can make it easier to select the correct zone settings for a particular project with less chance for error, especially when working with several projects that have different zone parameters.

To use a zone file, it must first be transferred to the data collector into the SOLO Forest documents folder (\My Documents\SOLO) or put in the SOLO Office documents folder if using on the desktop PC. If the zone file was created with custom projection parameters, then the corresponding coordinate system file (.cs5 or .pj5) must also be transferred.

Check the **Use the following zone file** checkbox then tap the **Browse** button. Locate the zone file and double tap on it to select it. The corresponding coordinate system file will automatically be selected for custom zone files.

Settings: Logging

The **Logging** page has settings to customize the way points are logged and the data that is stored with them.



Min. number of GPS fixes averaged per logged point

Enter the minimum number of GPS fixes (epochs) that must be collected and averaged for each position stored in this field. You will be required to occupy the location until the minimum number of epochs has been recorded.

Ask for Point Name

When this is checked, you are prompted to enter a point name for each point that is stored. Point names are limited to 20 characters in length.

Ask for Feature Information

When this is checked, you will be asked to enter feature and attribute data for each point that is stored.

Save PDOP and SNR data

When this box is checked, the PDOP and SNR data will be saved.

Beep

When this box is checked, a beep will sound each time a position is stored.

Force the map to draw completely while in Log by Interval mode

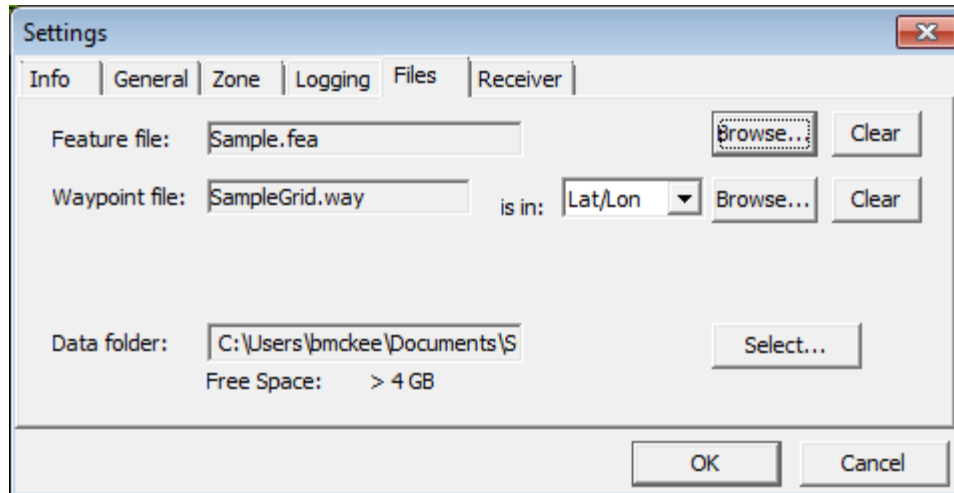
When this box is checked, the full Map View, including basemaps and images, will be displayed while logging by interval. Depending upon the interval and the speed of the processor, this may cause the software to respond slowly.

Warn user about map drawing in Log by interval mode

When running in *Log by Interval* mode with an interval of 5 seconds or less, the map does not redraw while logging unless the *Force the map to draw completely while in Log by Interval mode* box is checked. When this box is checked, a dialog will appear that warns that the map will not be redrawn.

Settings: Files

The **Files** page is where you select the feature file and Waypoint file that you want to use, as well as designating a backup folder and data folder.




Feature file

This field displays the currently selected feature file. In the illustrations that follow, no feature file was selected.

Waypoint File

This field displays the currently selected waypoint file. The Waypoint file is a list of known points to which you would like to navigate in the field.

Use the appropriate **Browse** button to select a different file or the appropriate **Clear** button so no file is selected.

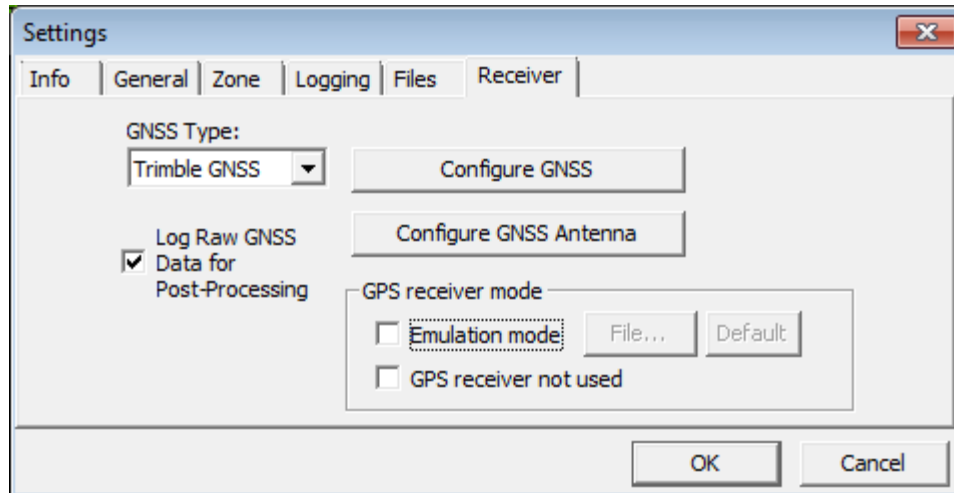
Note: When a waypoint file is loaded from this screen, it is loaded as a UDF layer. A waypoint file can also be loaded as a basemap layer by using the **View > Map Layers >  Add New Layer** and select **Waypoint (*.way)** as the file type (discussed later in this manual).

Data folder

This field displays the folder where data files are stored. The stored files include feature files, waypoint files, zone files and basemap configuration files. Tap the **Select** button to select from the available folders. The amount of free space in the selected folder is displayed for your reference.

Settings: Receiver

The **Receiver** page contains the settings that allow communication between the GNSS receiver and the computer. You can also configure SOLO Office - Forest Edition to operate in a GPS emulation mode from this page.



GNSS Type:

Select the GNSS type from the dropdown list. Options are: Trimble GNSS or NMEA-0183. When selecting Trimble GNSS the **Configure GNSS** and **Configure GNSS Antenna** buttons become active. By default "Smart" control over GNSS settings are used and applied. Click on these buttons to change settings for the GNSS device (e.g. COM port, Real-time, Antenna settings, etc.).

The default settings displayed are based on the connected Trimble GNSS hardware. COM ports and baud rates are automatically selected.

Use the NMEA-0183 option to connect to a GNSS receiver which can output positions in NMEA-0183 format. COM port, antenna height and baud rate must be specified for this option.

Log Raw GNSS Data for Post-Processing

Check this box (only available with Trimble GNSS receivers) if you wish to log raw data and create an SSF file to be post-processed in Trimble Pathfinder Office software. SSF files are created based in the same location as the UDF files.

The file naming convention for SSF files created in SOLO is: {UDF filename + date/time stamp .SSF}.

Please refer to the **Post-Processing Guide** section of the SOLO Forest manual for more information about post-processing raw GPS data.

Emulation mode

SOLO Office - Forest Edition normally needs to be connected to a GPS receiver to access many of the screens within the program. In order to facilitate training in an office environment without physically connecting to a GPS receiver, a special environment without physically connecting to a GPS receiver, a special *emulation mode* is available.

When the **Emulation mode** box is checked, SOLO Office - Forest Edition acts as if it were receiving a signal from a GPS receiver. When running in emulation mode, SOLO Office - Forest Edition is essentially playing a “recording” of a receiver moving around in a large area. This “recording” is played through until it ends where it then starts playing from the beginning again.

If you have been using emulation mode, it is important to remember to disable (un-check) it again before going out in the field since communication with the receiver does not take place while running in this special mode.

Use the **File** button to select a log file.

Note: A message will be displayed in the Map View to indicate that you are currently in Emulation Mode if this box is checked.

GPS Receiver not used

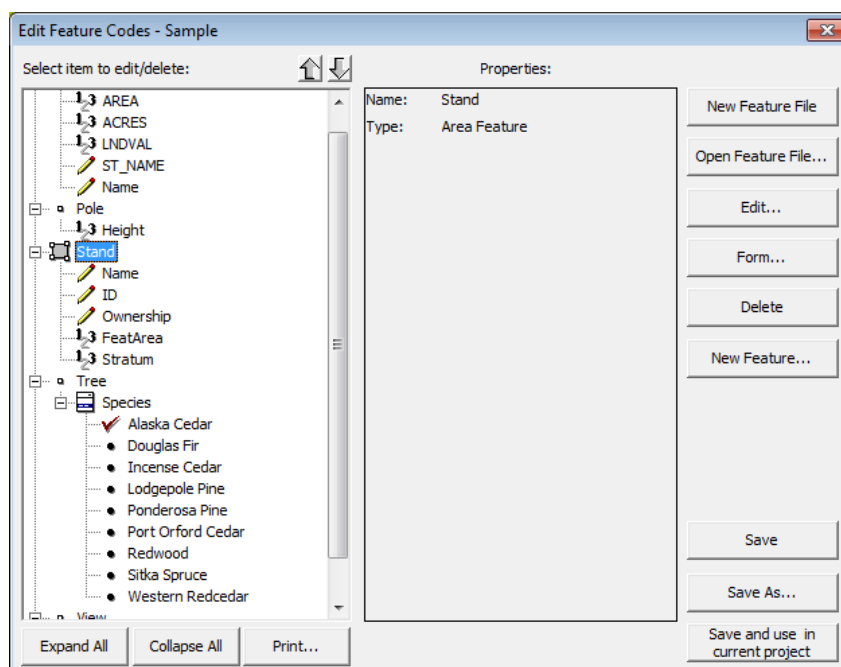
Check this box if you will be logging data manually or through the use of a laser rangefinder. Checking this box will disable prompts indicating that no GPS position is being received.

Once each page of the **Settings** screen is correctly filled in for your project, tap the **OK** button to close the screen and save the settings.



File > Feature Codes...


The **Edit Feature Codes** screen can be used to make changes to the feature file assigned to your project, create a new feature file or establish a link between the feature file assigned to your project and existing database files.

From the **File** pull-down menu, select **Feature Codes**. The **Edit Feature Codes** screen will be displayed listing all the features in the feature file assigned to your project.



Selecting any of the listed features will display the properties for that feature, indicating whether the feature is a Point, Line, or Area.

You may change the order of the features listed in the feature list by highlighting a feature and then tapping on the  or  buttons.

Clicking the  symbol next to any of the feature names will expand the feature to display the attributes for that feature. As with features, selecting any attribute will display the properties for that attribute.

Menu-type attributes can be further expanded to display the available menu and sub-menu options.

You can delete a feature by highlighting it and tapping on the **Delete** button.

Clicking on the **Expand All** button will cause every feature and attribute in the Feature File to be expanded to its full extent. Clicking on the **Collapse All** button will collapse every feature and attribute in the Feature File. Click on the **Print** button to print a copy of the feature list as it is displayed.

Creating a New Feature File

Click on the **New Feature File** button to create a new Feature File. You will first be prompted to save any changes to the current Feature File, then a new Feature File will be created that contains the features 'Generic Point', 'Generic Line' and 'Generic Area'.

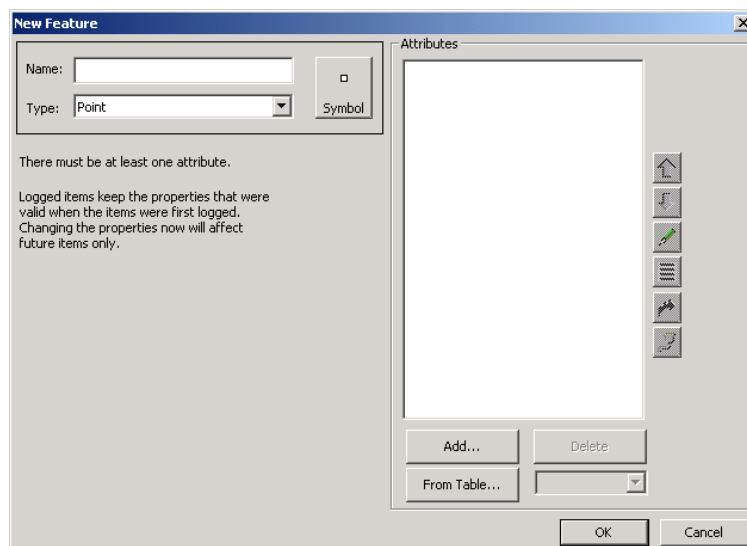
You can edit or delete these default features and add new features to the Feature File. When you are satisfied with the Feature File, click on the **Save As** button to save the file.

Opening an Existing Feature File

Click on the **Open Feature File** button to open an existing Feature File. A standard Windows **Open** dialog box will be displayed. Navigate to the desired folder and double-click on the Feature File name to open it.

Adding a New Feature

Click on the **New Feature** button to add a new feature to the current Feature File. The **New Feature** dialog box will be displayed.



Name

Enter the name for the new feature into the **Name** field.

Type

Select the feature type from the list in the Type field. (Point, Line and Area).

Symbol

You may assign a symbol to the feature by clicking on the Symbol button. Highlight the desired symbol from the displayed list and click the **OK** button to assign that symbol to the feature.

If you have selected to display logged data symbols (**View > Display Options**), when this new feature is logged the selected symbol will be displayed instead of the default gray box.

Once the Name, Type and Symbol information has been entered into the **New Feature** dialog box, you will need to add the attributes that you want to collect. Adding Attributes can be done in two ways: by typing in the attributes or by reading them from an existing DBF file. In the example below, a new feature will be added by typing in the attributes.

Adding Attributes Manually

Click on the **Add** button in the **New Feature** dialog box to display the **Add Attribute** dialog box. Enter a **Name** for the attribute then select the **Type**. Available attribute types are Text, Number, Menu and Date. Click on the Next button to define the parameters for the attribute.

For a Text attribute, you can specify the number of characters that may be entered for the attribute. For a Number attribute, you can specify a minimum, maximum and default values, as well as decimal precision and units. For a Date attribute there are no additional parameters.

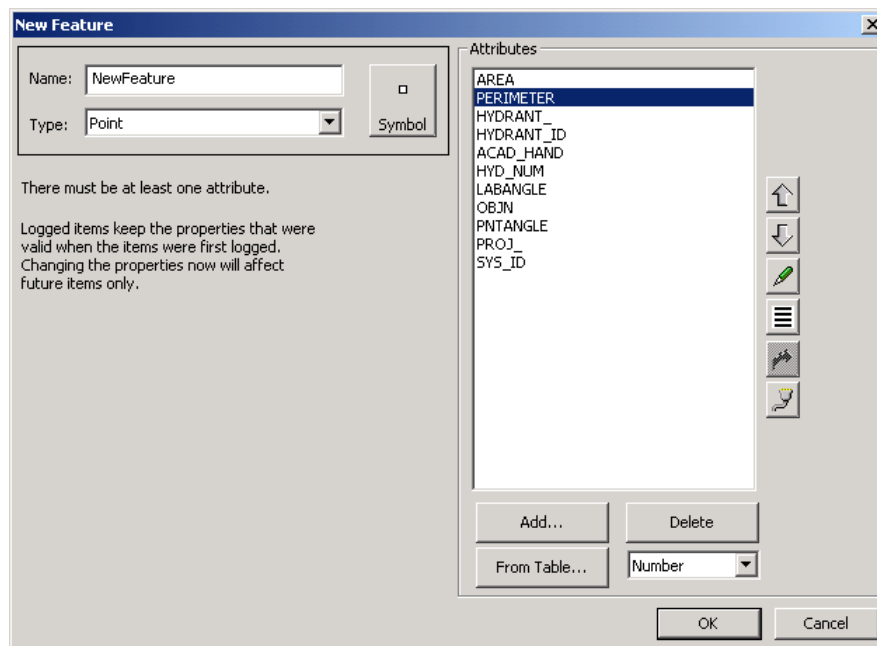
For all of the attribute types, you can specify that a value must be entered during the data logging routine by checking the box labeled 'Always require value entry'.

For a Menu attribute, you can define menu and sub-menu items. There are three ways to add menu and sub-menu items to an attribute in your Feature file. These methods are discussed in the **Adding Menu Items** section. You may also read menu items from a text file on your data collector at run-time. This is discussed in the **Adding Menu Items from a Text File** section.

Adding Attributes from a DBF File

As an alternative to typing in attributes, you may read the attributes into SOLO Office from an existing DBF database file. In the **New Feature** dialog box, click on the **From Table** button. A standard **Open** dialog box will be displayed where you can select the .DBF file that you would like to use to build the new feature.

Note: SOLO Office currently can only read a DBF file for this function.




Once you have selected the .DBF file, SOLO Office will read the file and populate the Attributes column with the fields from the file.

At this time you will also have the opportunity to create a link to the data in the .DBF file that will allow you to query the .DBF file during the data entry process. Please see the following section for more detailed information on this functionality.

Each attribute will be assigned an attribute type based upon the field type in the .DBF file.

You may change the order of the attributes by highlighting an attribute and clicking on the up and down arrows to the right of the attributes list.

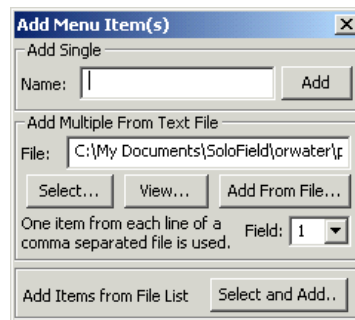
You may change the type by highlighting the feature and selecting an attribute type from the selection list just below the **Delete** button.

If a change to the attribute type is made, you will be prompted to provide additional information, depending upon the type selected. You may also choose to edit/verify the attribute settings by clicking on the **Edit Attribute**  button located just below the arrow buttons.

Click the **OK** button to accept the new feature and return to the **Edit Feature Codes** dialog box.

Adding Menu Items

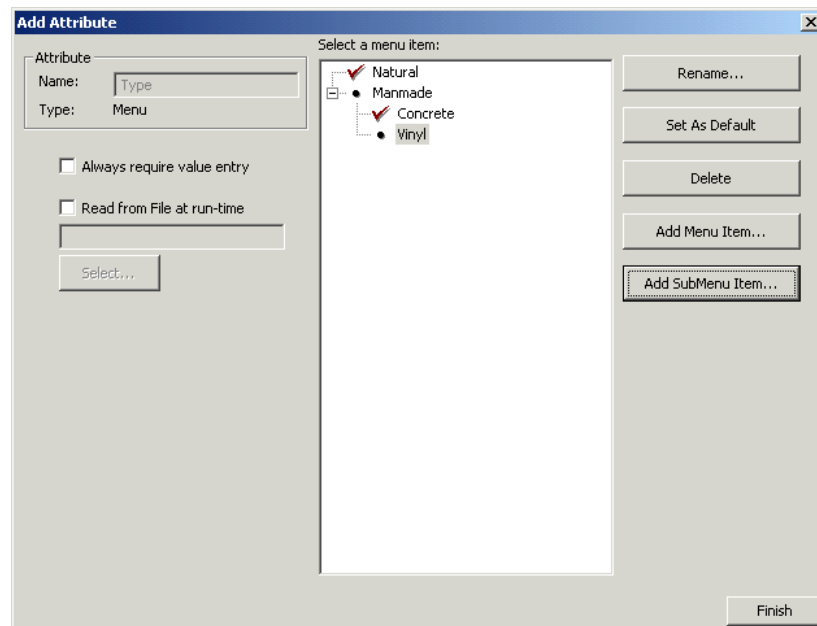
Click on the **Add Menu Item** button in the **Add Attribute** dialog box to add a menu item to the menu items list. The **Add Menu Item(s)** dialog box will be displayed.



The three methods for adding menu items to your feature file are accessed from this dialog box.

Adding Menu Items Manually

When adding a menu item manually, simply type the name of the menu item into the **Name** field and click on the **Add** button. The entered name will be added to the menu item list in the **Add Attribute** dialog box.



When you have entered at least one menu item, the remaining buttons in the **Add Attribute** dialog box will become active.

Rename

Click the **Rename** button to rename the highlighted menu item.

Set as Default

The first menu item entered will become the default menu item for that attribute. To set a new default, highlight the desired menu item and click on the **Set as Default** button.

Delete

Click on the **Delete** button to delete the highlighted menu item.

Add SubMenu Item

Menu items can also have sub-menu items. For example, the Pond feature in the example above has Manmade as one of the menu items used to describe the Type attribute. The Manmade menu could possibly have Concrete and Vinyl as sub-menu items. To enter sub-menu items, select the desired menu item then click the **Add SubMenu Item** button.

Once you are finished entering the menu items, click the **Finish** button to return to the New Feature dialog box.

Adding Menu Items from a Text File

SOLO Office also lets you add multiple menu items at the same time by reading them from a text file.

One item from each line of a comma-delimited file can be added. Click on the **Select** button to select the file from which you wish to add menu items.

Click on the **View** button to view the selected file, and to verify the contents.

Specify which column of the selected file to use when adding the menu items in the **Field** field.

Click on the **Add From File** button to add the specified items as menu items. A dialog box will report any errors, and/or how many items will be added.

Adding Menu Items from a File List

SOLO Office also lets you add multiple menu items at the same time by reading them from file names in a specified folder. Click on the **Select and Add** button in the **Add Menu Item(s)** dialog box to specify the folder. A dialog box will report any errors, and/or how many items will be added.

Reading Menu Items from a Text File at Run-time

Instead of building menu items into your Feature file, you may choose to read them from a text file located on your data collector. The specified text file will be read during the data collection process.

Check the box labeled 'Read from File at run-time' in the **Add Attribute** dialog box and then tap the **Set** button to choose the text file. The text file must be in the **Data Folder** specified in the **Settings** dialog box (Page **Error! Bookmark not defined.**) and must also use the following format:

default menu name

menu item 1,default submenu name, submenu item 1, submenu item 2

menu item 2,default submenu name, submenu item 1, submenu item 2

A blank line or end-of-file terminates the menu item list (except the first line, which may be blank if there is no specified default). The default names may be left blank if they are not needed.

An example file is displayed below. There are 9 menu items, 3 of which have submenu items. "Ponderosa Pine" is the default. Notice that "Ponderosa Pine" is listed twice, first as the Default Menu Item (first line of the file), and second as a menu item. "Sitka Spruce" has no specified default sub-menu item:

Ponderosa Pine

Alaska Cedar,Tall,Short,Medium,Tall

Douglas Fir

Incense Cedar

Lodgepole Pine

Ponderosa Pine

Port Orford Cedar

Redwood,Red,Blue,Red,Yellow

Sitka Spruce,,Thin,Medium,Thick

Western Redcedar

Creating a Link to existing Data

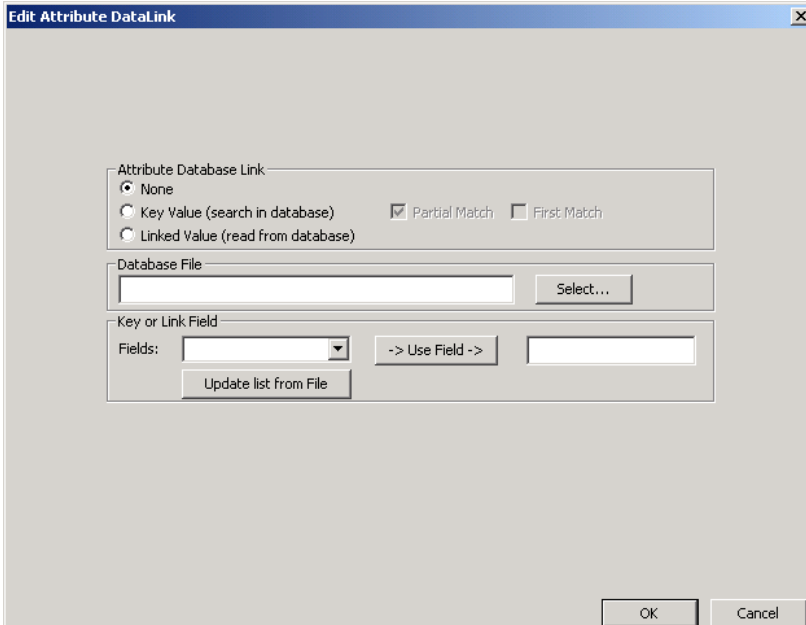
SOLO Office will allow you to link attributes in your Feature file to a .DBF file on your data collector. Through this link you can query the .DBF file and populate your attributes during the data collection process. A feature can contain both linked and non-linked attributes.

In the **New Feature** dialog box, click on the **From Table** button. A standard **Open** dialog box will be displayed where you can select the .DBF file that you would like to use to build the new feature. You will be asked if you wish to automatically create database links for each added attribute. Click on the **Yes** button to establish the links.

Once the links have been established, those attributes with links will be marked in the **New Feature** dialog box with an ampersand @. At this point you can add additional attributes, as describe earlier, by tapping the **Add** or **From Table** buttons.

To take full advantage of the database links, it is necessary to establish at least one key attribute. The key attribute should be an attribute that will have a unique value for each record in the database that it is linked to.

Highlight the attribute that you wish to designate as the key attribute, and then click on the **Edit DataLink** button . The **Edit Attribute DataLink** dialog box will be displayed.



The **Edit Attribute DataLink** dialog box is shown. It contains the following sections:

- Attribute Database Link:** Three radio buttons: **None** (selected), **Key Value (search in database)**, and **Linked Value (read from database)**. To the right of the radio buttons are two checkboxes: **Partial Match** (checked) and **First Match** (unchecked).
- Database File:** A text input field followed by a **Select...** button.
- Key or Link Field:** A section containing a **Fields:** dropdown menu, a **-> Use Field ->** button, and an empty text input field. Below the dropdown is an **Update list from File** button.
- Buttons:** **OK** and **Cancel** buttons at the bottom right.

There are three radio buttons that allow you to specify the link status for the attribute as no link, key value or linked value. If you have followed the procedure above, the attribute will be designated as a **Linked Value**.

Tap the radio button for **Key Value** to establish the attribute as the key attribute. Click on the radio button for **None** to remove the link.

You may also choose to link your attribute to a field in a different .DBF file than the one used to generate the attribute list.

Enter the appropriate database file name and path in the **Database File** field, or tap the **Select** button to select the file. The fields available in the database file will be listed in the **Fields** field. Select the field in the database file that you wish to link to the current attribute from the list. Click on the **Use Field** button to enter the field name into the **Use Field** field.

Click on the **OK** button to return to the **New/Edit Feature** dialog box. The attribute that you have selected to be the key attribute will be displayed in the attribute list with an asterisk (*) in place of the ampersand (@).

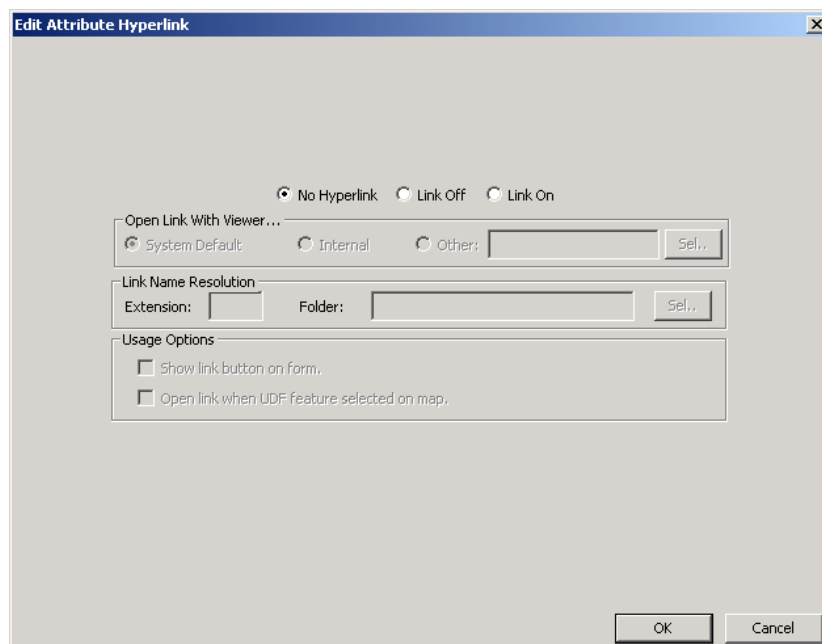
During the data collection process, you will be able to enter a value into the key attribute field and query the linked database file.

If a match is found, the remaining linked attributes will be filled from the database file.

Setting up an Attribute Hyperlink

SOLO Office will allow you to establish a hyperlink between a menu or text attribute and an OLE object, such as a photo or audio file. The file name of the linked object is stored as the attribute, and you can access the object by selecting the logged feature in the Map View.

To set up the hyperlink, tap the **Edit Hyperlink**  button in the **Edit Feature** dialog box. The **Edit Attribute Hyperlink** dialog box will be displayed.



The default selection is **No Hyperlink**, and the remaining fields in the dialog box are inactive. Select **Link On** to set up the hyperlink. Select **Link Off** to disable an established link.

Open Link with Viewer

Specify how you would like the link to be accessed in the Map View. Choose **System Default** to use the default application for your data collector, **Internal** to use the viewer built into SOLO Office, or **Other**. If **Other** is selected, tap the **Sel** button to select the application.

Link Name Resolution

Enter the file extension of the object to be linked in the **Type** field. Enter the folder name where the object to be linked is stored, or tap the **Sel** button to browse the available folders.

Usage Options

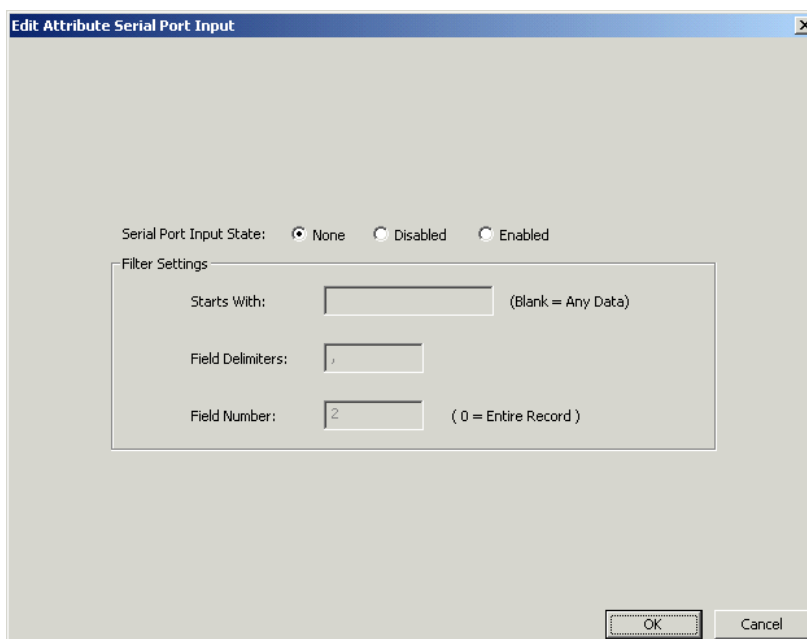
If you wish to see a preview of the linked object during the data collection process, check the box labeled '**Show link button on form**'. This will place a button in the **Log** or **Attributes** dialog box (displayed during data collection) that will enable the preview.

If you wish to access the linked object from the Map View, check the box labeled '**Open link when UDF feature selected on map**'. When a feature that contains a link is selected on the Map View, the linked file will be accessed.

Setting up Attribute Serial Input

SOLO Office will allow you to enter attribute information from an external serial device, such as calipers or a voltmeter. When serial port input is set up, SOLO Office will look for the appropriate message when the attribute field is highlighted during data collection.

To set up serial input for an attribute, tap on the **Edit Serial Input**  button in the **Edit Feature** dialog box. The **Edit Attribute Serial Port Input** dialog box will be displayed.



The default selection is **None**, and the remaining fields in the dialog box are inactive. Select **Link On** to set up the hyperlink. Select **Link Off** to disable an established link.

Starts With

Enter the string that begins the serial message that you wish to extract the input from. If this field is left blank, SOLO Office will accept any message that comes into the port.

Field Delimiters

Specify the character(s) that are used to delimit the fields in the incoming serial message.

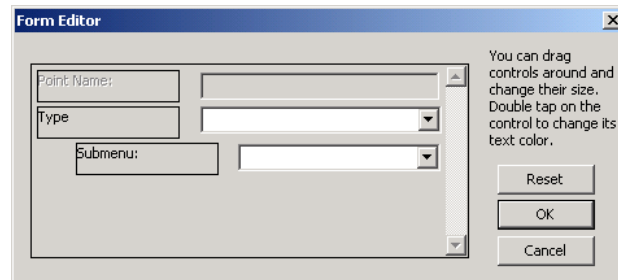
Field Number

Specify which field in the serial message you wish to populate the attribute with. Incoming fields will be numbered based upon the field delimiter entered earlier. A '0' indicates that the entire message be stored in the attribute field.

Click the **OK** button to save any changes and return to the **Edit Feature** dialog box.

Adjusting the Layout

SOLO Office - Forest Edition provides the ability to modify the appearance of the data entry form that is presented for each feature in the feature file. To adjust the layout of the features in your feature file, tap on the **Form** button in the **Edit Feature Codes** screen.



In the **Form Editor** screen, you will be able to drag the field labels and data entry boxes around to the desired position. You may also resize the boxes.

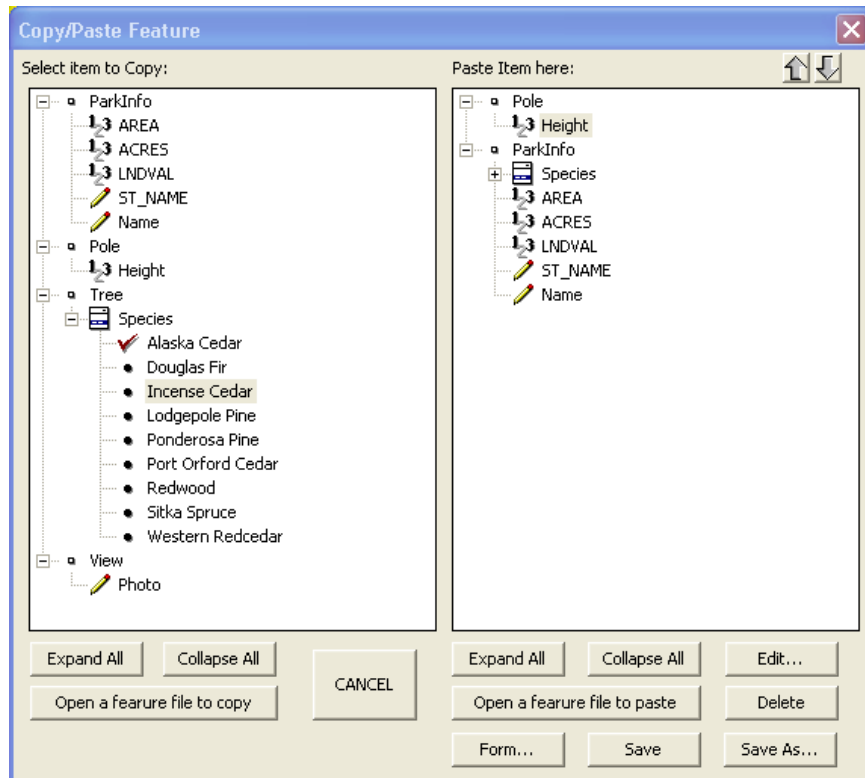
Change the color of the labels and boxes by double tapping on them.

Tap the **Reset** button to restore the original settings.

Tap the **OK** button to accept the new settings and return to the **Edit Feature Codes** screen.

File > Copy Feature Codes

The File > Copy Feature Codes menu option allows you to open two feature files simultaneously and copy data from the feature file displayed on the left and paste it in the feature file displayed on the right. By default, the current feature file is displayed on the left side, which cannot be modified from this screen, and the right side is empty. Use the Open a feature file to copy to open a different feature file on the left side of the screen to copy from. Use the Open a feature file to paste to open a feature file on the right side of the screen to past data to.



There are two ways to copy and paste data from the left side to the right side: You can either drag the items from the left side to the right side, or right-click on the data you want to copy from the left side, select **Copy** and right-click where you want to paste it to on the right side and select **Paste**.

The **Expand All** button will expand all the branches of the associated feature file. **Collapse All** will collapse all the branches.

The Edit or Delete button will edit or delete the feature selected on the right side of the screen.

The Form button opens the form editor for the feature selected on the right side of the screen.

After changes have been made, tap Save to save the changes or Save As to save the file to a new file. Clicking CANCEL will close the screen and any changes made since the last save will be lost.

File > Post Processing Update

If you have logged raw GPS data for your project, this function allows you to synchronize the differentially corrected position data from the raw data file with the feature data in your project file. This function is an optional add-on to SOLO Office. Please refer to the Post Processing section of the SOLO Forest Manual for more detailed information regarding this function.

File > Exit

This menu option closes SOLO Office – Forest Edition.

The Prepare Menu

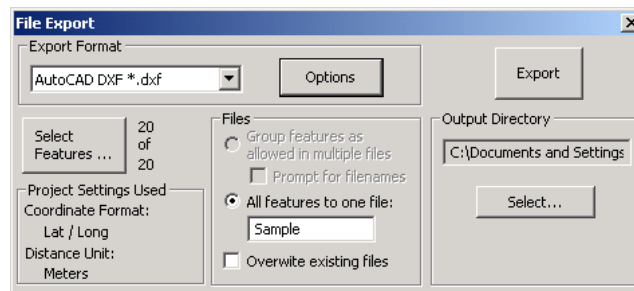
The functions contained in the **Prepare** menu allow you to create zone and waypoint files, transfer files to and from your field data collector, perform geodetic functions and print your projects. Each of the functions available in the **Prepare** menu is described below.

Prepare > Export

Once you have reviewed your project, and have made any necessary changes, you will want to convert your data into a format that is compatible with your GIS or CAD system. The file export routine provided by SOLO Office will allow you to create ESRI Shapefiles, AutoCAD DXF files, ASCII TXT files, TDS CR5 files, or Advanced ASCII from your project.

Prepare > Export > SHP/DXF/TXT/CR5 Export

The desired export format can be selected from within the **File Export** dialog box.



You may select the export format by clicking on the down arrow to the right of the selection box. Choose from ASCII (Text), TDS CR5, AutoCAD DXF and ESRI (ArcView) Shapefile.

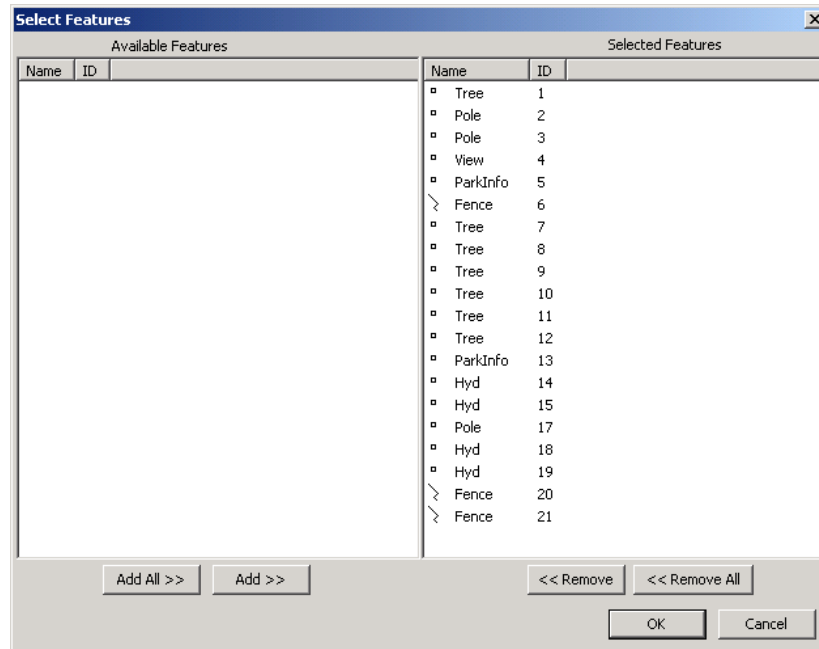
Each format (except CR5) has various options for configuring the final output.

Select Features

SOLO Office will export all of the features in your project by default. If you wish to export only a subset of your collected features, you may click on the **Select Features** button to display the **Select Features** dialog box.

When the **Select Features** dialog box is first opened, all of the features in your project are listed in the **Selected Features** column. To remove a feature from the **Selected Features** column, highlight it and click the [Remove] button.

You may click the [Remove All] button to move all of the features in your project to the **Available Features** column.



If any features are in the **Available Features** column, you can move them to the **Selected Features** column individually by highlighting the feature and clicking the **[Add]** button. You can move the entire list of features by clicking on the **[Add All]** button.

Click on the **OK** button to confirm your selections and return to the **File Export** dialog box.

Projection Settings

This box displays the current coordinate format (northing-easting or latitude-longitude), and the distance units. The selected features will be exported using the current selections in the **General** and **Zone** pages of the **Settings** dialog box. (If the displayed projection settings do not meet your needs, you can close the **File Export** dialog box and then select **File > Settings** to change the projection settings.)

Files

Depending upon the export format selected, you may choose to export your features in two ways: a unique file for each feature layer, or one file containing all features. For the DXF and CR5 formats, all features are exported to one file. For the ESRI Shapefile format a set of three files (.shp, .shx, .dbf) will be created for each feature layer (poles, trees, etc.). For the ASCII format, you can choose between methods.

SOLO Office will automatically provide file names for the files created during the export process. The default file names will be based upon the feature name (e.g. tree0001.shp). If you would like to input your own file name, you can check the box labeled **Prompt for Filenames**. You will then be prompted to input a filename for each file as it is created.

You may also choose to overwrite existing files with the same name and extension by checking the checkbox labeled **Overwrite existing files**.

Output Directory

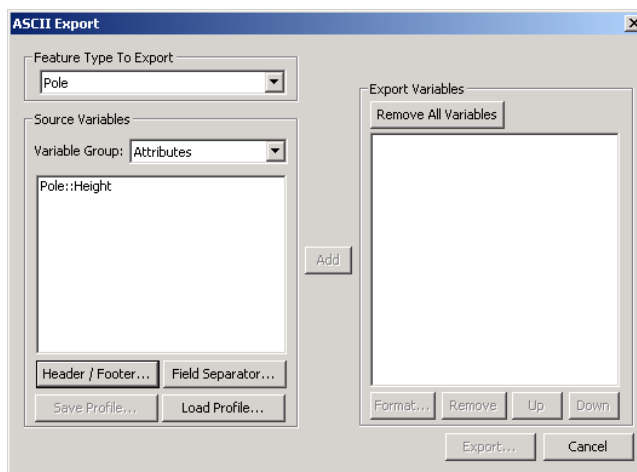
The data directory specified in the **Files** page of the **Settings** dialog box will be the default output directory. You may choose another directory by clicking on the **Select** button.

When you are satisfied with your selections, click on the **Export** button to create the file(s) in the selected format.

Prepare > Export > Advanced ASCII

When you select this option, the **ASCII Export** dialog box will be displayed. In this dialog box you will be able to customize the format of your ASCII text file using a variety of variables, headers, footers, etc. You will also be able to specify the order in which variables are output.

The **ASCII Export** dialog box consists of two sections, the left section containing the available variables and the right section listing the variables selected for export. As you select variables to be exported, they will be displayed on the right side of the dialog box.



Feature Type To Export

Click on the down arrow in this selection box to select the feature type from the available list. All of the features in the current project will be listed, as well as an option for ALL FEATURES.

If you select a specific feature, you will have the opportunity to select which of the available attributes for that feature will be exported. If you select ALL FEATURES, all of the attributes for all of the features will be exported.

Variable Group

Click on the down arrow in this selection box to select the Variable Group that you wish to work with. Each of the available groups is described below.

Attributes

Each of the available attributes for the selected feature will be listed here. If you have selected ALL FEATURES, no attributes will be listed.

Coordinates

X, Y and Z variables in both Lat/Lon/Height and North/East/Elev format are available. The North/East/Elev format is only applicable if you have selected Northing-Easting in the **Settings** dialog box.

Feature

A variety of attributes concerning the feature are available, including Feature Name, Time and Date logged, Area, Perimeter, etc.

GPS

The GPS indicators for the feature can be selected.

Miscellaneous

The Project Name, Projection/Zone information and a User Text String field are available.

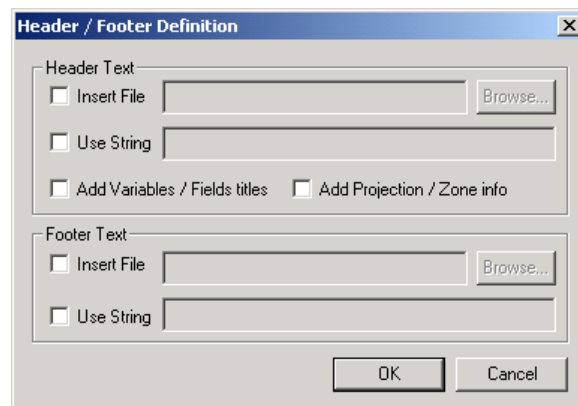
Items selected from the Variable Groups are added to the **Export Variables** list by clicking on the **Add** button. You may add as many variables to the Export Variables list as necessary, and you may list the same variable multiple times.

File Header/Footer

Add file header or footer information to your ASCII file format by clicking on the **Header/Footer...** button. The **Header/Footer Definition** dialog box will be displayed.

Header Text

Select from the available options for the header text. If you choose to insert a file, click on the **Browse** button to choose the TXT file that you wish to insert. If you select to insert a string, type it into the data box to the right of the prompt.



Footer Text

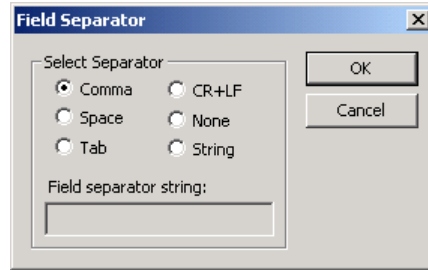
Select from the available options for the footer text. If you choose to insert a file, click on the **Browse** button to choose the .TXT file that you wish to insert.

If you select to insert a string, type it into the data box to the right of the prompt.

Click on the **OK** button to save any changes and return to the **ASCII Export** dialog box.

Field Separator

Specify the field separator by clicking on the **Field Separator** button. The **Field Separator** dialog box will be displayed.



Select Separator

Select from the available options for the field separator. If you choose to insert string as the field separator, type it into the data box to the right of the prompt.

The selected separator will be inserted between each variable in the ASCII file.

Click on the **OK** button to save any changes and return to the **ASCII Export** dialog box.

Note: A \ separator will be appended to exported attributes if they have a submenu item.

Variable Order

After the desired variables have been added to the **Export Variables** list, you can arrange the order of the variables using the **Up** and **Down** buttons. Simply highlight a variable and click on the **Up** or **Down** button to change its location in the list.

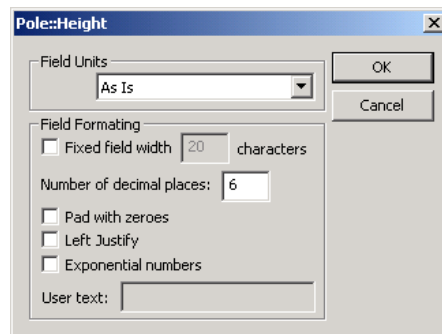
If you would like to remove a variable from the **Export Variables** list, highlight the variable and click on the **Remove** button.

Formatting Variables

Once a variable has been added to the **Export Variables** list, you can further format the variable by highlighting it in the **Export Variables** list and clicking on the **Format** button.

Field Units

Use this field to specify if you want to export the variable 'as is', or if you want to force upper or lower case.



Field Formatting

Use the fields in this section to specify a fixed field width, decimal precision, padding with zeroes, justification and if you would like to use exponential numbers.

Click on the **OK** button to save any changes and return to the **ASCII Export** dialog box.

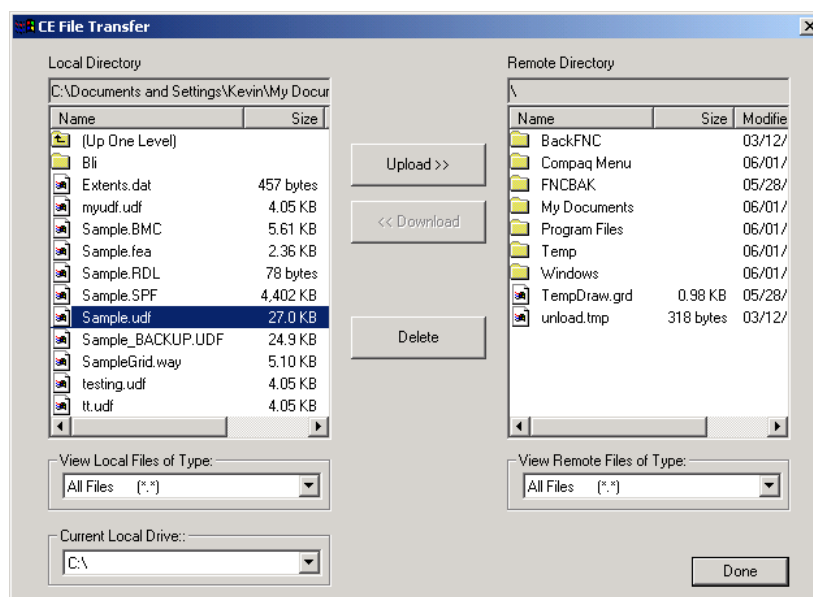
Click on the **Export** button to create the ASCII text file in the specified data directory.

Prepare > File Transfer

The **Prepare > File Transfer** menu option allows you to transfer projects and other files between SOLO Office and your field data collector. You must be connected to your field data collector using Microsoft ActiveSync or Windows Mobile Device Center in order to access the file transfer utility. When you select **Prepare > File Transfer**, the **CE File Transfer** dialog box will be displayed.

The **CE File Transfer** dialog box contains two columns, **Local Directory** and **Remote Directory**, separated by action buttons. The default selection for the **Local Directory** is the **Data Directory** specified in the **File** page of the **Settings** dialog box. The default selection for the **Remote Directory** is the root directory of the data collector.

The **View Local Files of Type** and **View Remote Files of Type** fields located below the columns allow you to indicate a specific file type to be displayed in the column. The default is to display All Files. The **Current Local Drive** field allows you to change the current drive.



You can navigate through the folders of either the Local Directory or the Remote Directory by double-clicking on the desired folder or the Up One Level folder.

Upload

Highlight the file in the Local Directory that you wish to upload to your field data collector and click on the **[Upload]** button.

Download

Highlight the file in the Remote Directory that you wish to download to your PC and click on the **[Download]** button.

Delete

Highlight the file in either directory that you wish to remove and click on the **Delete** button.

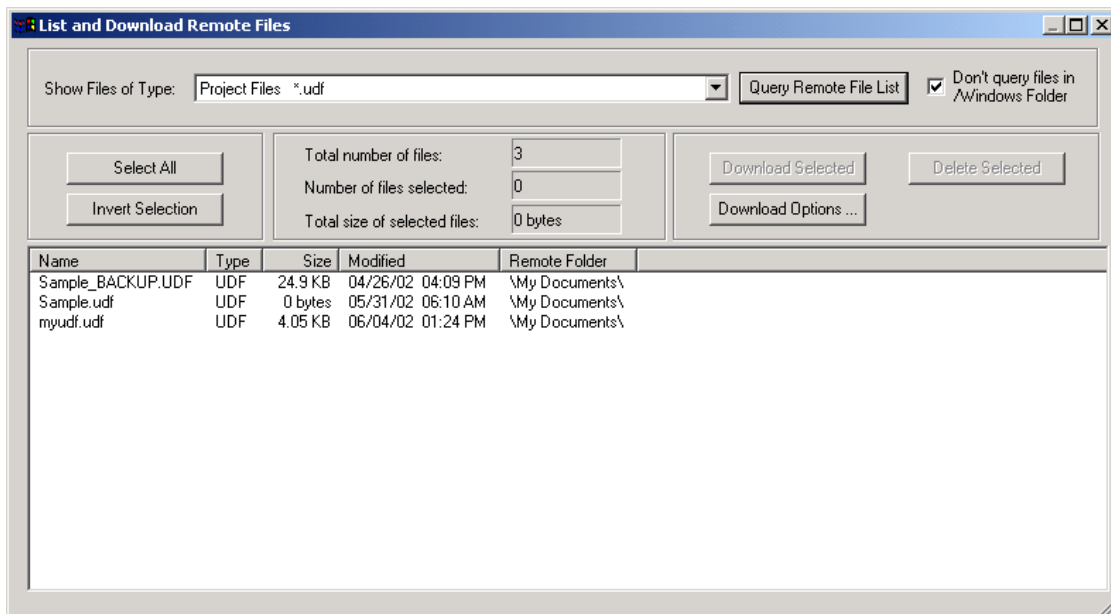
For batch file transfer options, select **Prepare > Remote File List > Download** to transfer files from your data collector to your PC, or select **Prepare > Project File List > Upload** to transfer project files from your PC to your data collector.

Prepare > Remote File List > Download

The **Prepare > Remote File List > Download** menu option allows you to specify a list of files to transfer from your data collector to your PC. When you select **Prepare > Remote File List > Download**, the **List and Download Remote Files** dialog box will be displayed.

The **List and Download Remote Files** dialog box will allow you to query your data collector for specific file types and then provides a list of the query results. You can then select the desired files from the list for transfer or deletion.

The **Show Files of Type** field allows you to specify the types of files that you would like to search the data collector for. Click on the **Query Remote File List** button to search the data collector. The results will be listed in the file list box. By default, the box labeled **Don't query files in the \Windows Folder** is checked. This selection will stop SOLO Office from looking in the \Windows folder when performing the query, significantly reducing the amount of time necessary to perform the query.

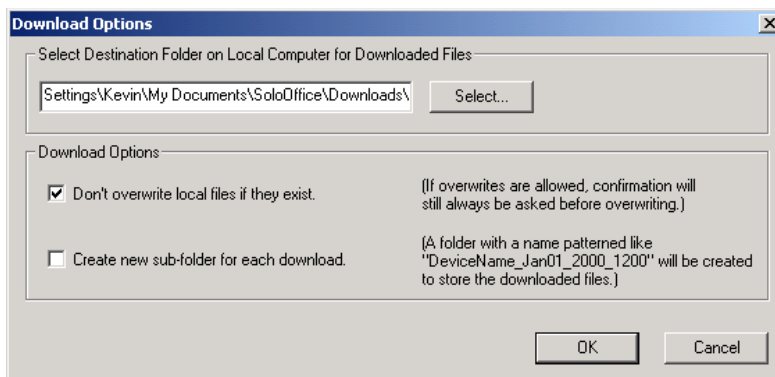


Select files from the list by clicking on the file name. You may select multiple files by holding down the Shift key or the Control key as you click on the file names. Click on the **Select All** button to select all of the files, or you may select the inverse of your selected files by clicking on the **Invert Selection** button. Once a file or files have been selected, the **Download Selected** or **Delete Selected** buttons will become active.

Download Options

To review the download directory and other download options, click on the **Download Options** button to display the **Download Options** dialog box.

Destination Folder



Select the destination folder on your PC by clicking on the **Select** button.

Don't Overwrite Local Files

This option will protect existing files on your PC from being overwritten by the files on your data collector.

Create New Sub-folder

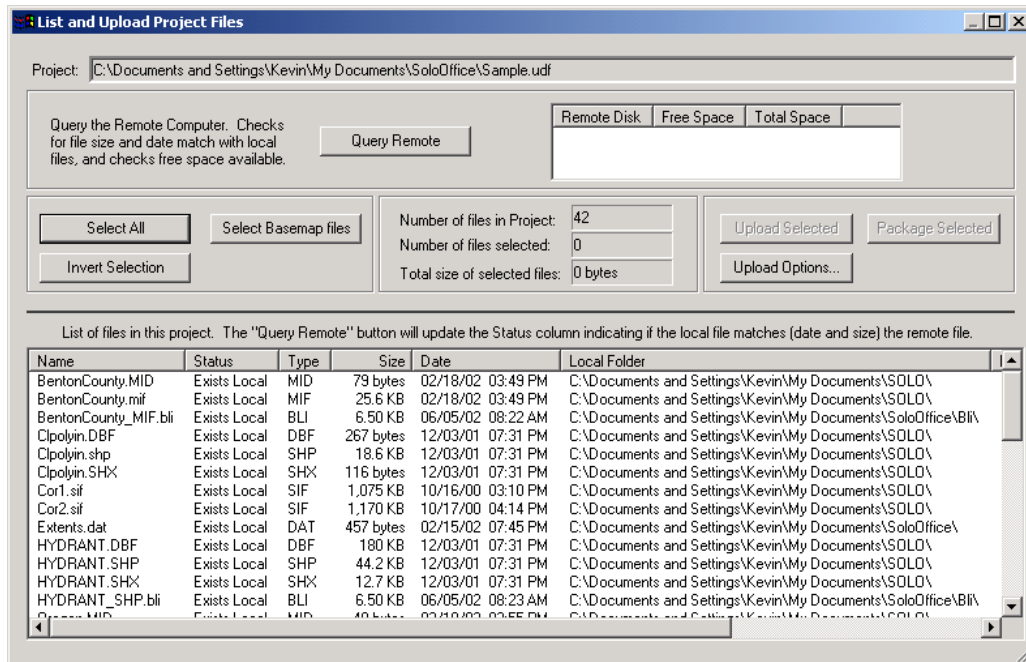
This option will create a new sub-folder in the specified destination folder each time the download function is used. The folder name will be based upon a combination of the time and date of the file transfer.

Click on the **OK** button to verify your selections and return to the **List and Download Remote Files** dialog box.

Prepare > Project File List > Upload

The **Prepare > Project File List > Upload** menu option provides you with a list of all of the files associated with the currently open UDF Project. You may then select any or all of these files for a batch transfer to your data collector.

When you select **Prepare > Project File List > Upload**, the **List and Upload Project Files** dialog box will be displayed.



The current project is displayed in the Project field, and cannot be edited. All of the files associated with the project are listed in the list box at the bottom of the dialog box.

Select files from the list by clicking on the file name. You may select multiple files by holding down the Shift key or the Control key as you click on the file names.

You may select all of the listed files by clicking on the **Select All** button. You may select all of the basemap and image files, and their associated files by clicking on the **Select Basemap Files** button. Finally, you may select the inverse of your selected files by clicking on the **Invert Selection** button. Once a file or files have been selected, the **Upload Selected** button will be active.

Package Selected

To compress and package selected files into a self-extracting SPF (SOLO Package file), select files from the list and click on the **Package Selected** button. A standard Windows **Save As** dialog box will be displayed. When SPF files contain multiple vector layers with the same name, they will be renamed to avoid conflicts upon extraction.

Upload Options

To review or modify the upload directories and other upload options for your data collector, click on the **Upload Options** button. The **Upload Options** dialog box will be displayed.

Destination Folders

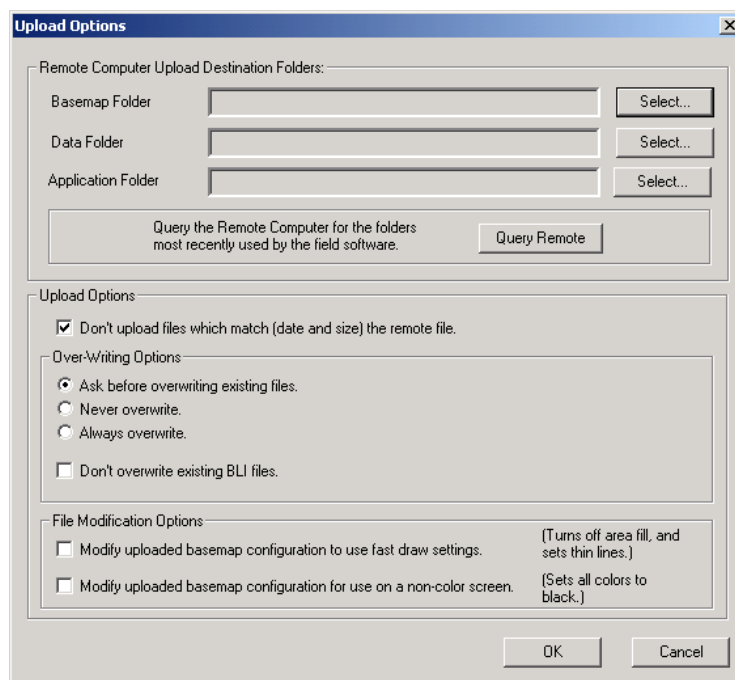
Select the destination folder(s) on your data collector by clicking on the appropriate **Select** buttons. Alternatively, you can default to the folder on the data collector that was most recently used by SOLO Office by clicking on the **Query Remote** button.

Don't Upload Files which Match

This option will prevent SOLO Office from uploading files that have the same size and date as files currently existing in the destination folder on your data collector.

Overwriting Options

Specify whether you wish to **Ask Before** overwriting files, **Never** overwrite files or **Always** overwrite files.



You may also choose not to overwrite existing DAT files. These files are computer-specific files containing information about your basemap files.

File Modification Options

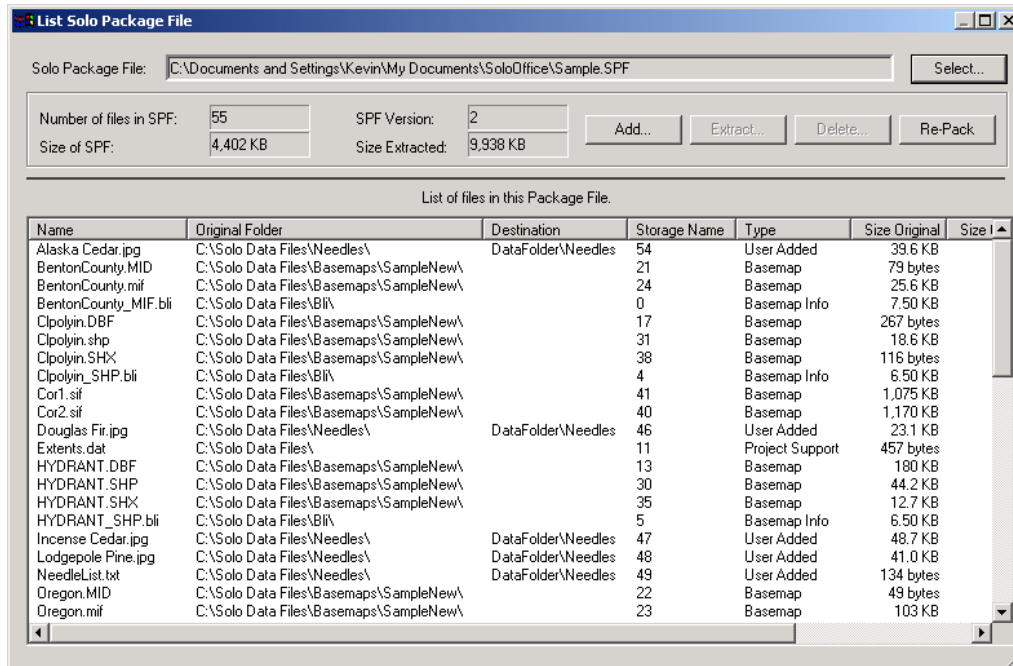
These options allow you to automatically modify the selected Basemap Configuration File (.BMC) to use fast draw (no fill and thin lines) and non-color (all colors set to black) modes.

Click on the **OK** button to verify your selections and return to the **List and Upload Project Files** dialog box.

Prepare > Package File List

The **Prepare > Package File List** menu option allows you to search folders on your PC for SPF files. When you select **Prepare > Package File List**, the **List SOLO Package File** dialog box will be displayed. You may select the desired SPF file by clicking the **Select** button. The contents of the SPF file will be displayed in the list box.

The default is to sort the results alphabetically by name. You may change the display order by clicking on the column headings.



File information includes the **Number of files in SPF**, the **Size of SPF** when compressed, the **SPF version** and **Size Extracted** displays the total size of all the files in the SPF when extracted.

The **Add** button allows you to add individual files to the package.

The **Extract** button allows you to copy a file or set of files to another location without removing the file(s) from the package.

The **Delete** button allows you to permanently remove a file or files from the packages.

The **Re-Package** button allows you to repackage the package after you have made changes.

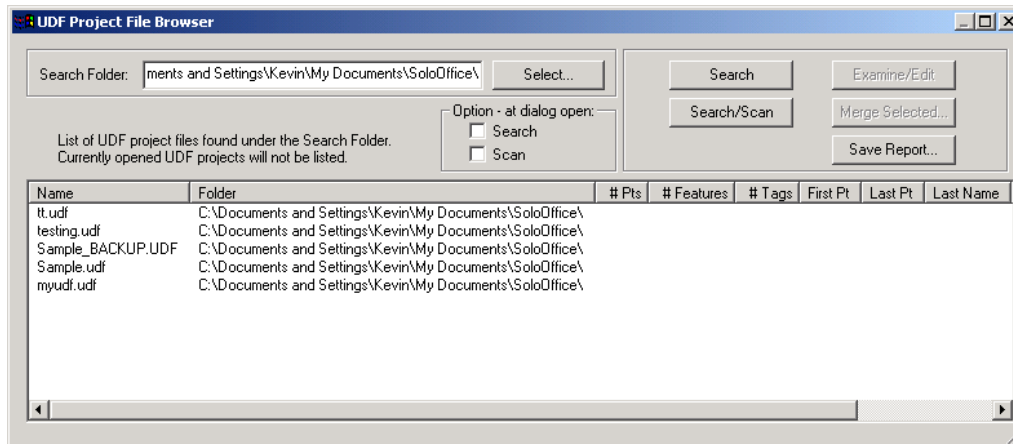
Prepare > UDF File Browser

The **Prepare > UDF File Browser** menu option allows you to search folders on your PC for UDF files. When you select **Prepare > UDF File Browser**, the **UDF Project File Browser** dialog box will be displayed.

You may specify the **Search Folder** by clicking on the **Select** button. The search routine will search the specified folder as well as sub-folders. Initiate the search by clicking on the **Search** button.

The results of the UDF search will be displayed in the list box. The default is to sort the results alphabetically by name. You may change the display order by clicking on the column headings.

Like the **Search** function, the **Search/Scan** function will search the specified folder for .UDF files. However, instead of just listing the file name and location, it will give more information on the file such as the number of points in the file, number of tags, operators etc. To stop the search, click on the **Cancel** button.

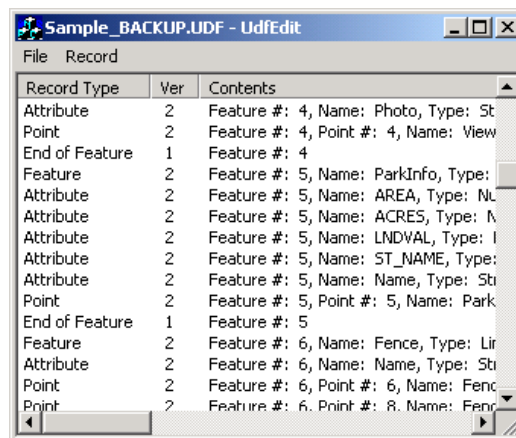


You may store an ASCII text report of the results of either type of search by clicking on the **Save Report** button. A default file name of UDF_List will be supplied, however, you may rename the file before saving.

You can set the UDF File Browser to automatically **Search** or **Search/Scan** at the initial opening of the dialog by selecting the appropriate checkbox.

Examining and Editing UDF Files

You may examine and edit a UDF file by selecting the file in the list box and clicking on the **Examine/Edit** button. The contents of the UDF file will be displayed in the **UDF Edit** dialog box.



You may also access the **UDF Edit** dialog box by double clicking on a UDF file in the list box.

To edit the contents of the UDF File, double click on the selected record type. Depending upon the record type selected, the appropriate **Edit Record** dialog box will be displayed. You may modify information such as name, type, color and lat/long.

Merging UDF Files

You may merge two or more UDF files into a single file by first highlighting the desired files, then clicking on the **Merge Selected Files** button. A standard Windows **Save As** dialog box will be displayed where you can enter a file name and navigate through the available folders.

If either of the UDF files being merged also have an associated RDL file, a new RDL file will be created with the same name as the new UDF file and contain all the data from the original associated RDL file(s).

Prepare > Convert UDF to Version 1...

You may convert the currently active UDF file to a version 1 UDF. When you select **Prepare > Convert UDF to Version 1**, a dialog will appear warning you that there may be some loss of data in the conversion. If you select **Yes** to proceed, a standard **Save-As** dialog will appear. Enter a name for the version 1 UDF file. If you give the new UDF a slightly different name, then the original file will still be intact in its original version.

Prepare > Waypoint File

SOLO Office allows you to create or edit a Waypoint file (.way) for use with your field data collector. When you select **Prepare > Waypoint File**, the **Waypoint File Creation** dialog box will be displayed.

Row	Name	Latitude	Longitude	Elevation	Description
1		44°34'06.72" N	123°18'44.72" W	0.00 m	
2		44°34'06.69" N	123°18'46.08" W	0.00 m	
3		44°34'06.66" N	123°18'47.43" W	0.00 m	
4		44°34'06.62" N	123°18'48.79" W	0.00 m	
5		44°34'06.59" N	123°18'50.15" W	0.00 m	
6		44°34'06.55" N	123°18'51.51" W	0.00 m	
7		44°34'06.52" N	123°18'52.87" W	0.00 m	
8		44°34'06.49" N	123°18'54.23" W	0.00 m	
9		44°34'06.45" N	123°18'55.59" W	0.00 m	
10		44°34'06.42" N	123°18'56.95" W	0.00 m	
11		44°34'05.75" N	123°18'44.67" W	0.00 m	
12		44°34'05.72" N	123°18'46.03" W	0.00 m	
13		44°34'05.68" N	123°18'47.39" W	0.00 m	
14		44°34'05.65" N	123°18'48.75" W	0.00 m	
15		44°34'05.62" N	123°18'50.10" W	0.00 m	
16		44°34'05.58" N	123°18'51.46" W	0.00 m	
17		44°34'05.55" N	123°18'52.82" W	0.00 m	

Number of points: 134

Buttons: Clear All, Delete Selected, Load file..., Append from file..., Save to File...

Waypoint Add or Change:

Name:

Latitude: DD.DDDD

Longitude: DD.DDDD

Elevation:

Description:

Buttons: Add Waypoint, Change Selected

Input Data Format:

Lat/Lon: ☒ DD.DDDD ☐ DD.MMSSSS ☐ DDMM.SSSS

Elevation units (from Settings...):

Input text file columns must be: Point Name, Lat, Lon, Elevation, Description

Add Waypoint

To add a waypoint to the file, enter the Name, Latitude, Longitude, Elevation and a brief Description into the fields in the lower-left corner of the dialog box. The Latitude and Longitude must be entered in DD.DDDD format. Click on the **Add Waypoint** button to add the waypoint to the list displayed in the upper-left corner of the dialog box.

Change Selected

You may edit an existing waypoint by highlighting it in the list and then making the necessary changes to the name, position and description fields. Click the **Change Selected** button to apply the changes.

Clear All

Click on the **Clear All** button to remove all of the currently listed waypoints from the waypoint list.

Delete Selected

To delete a single waypoint from the waypoint list, highlight it and click on the **Delete Selected** button.

Load File

You may load three types of files into the **Waypoint File Creation** dialog box: Waypoint files (.way), UDF Project files (.udf) or ASCII text files (.txt). Click on the **Load File** button to display a standard Windows **Open** dialog box. There you can select the type of file that you wish to load and use the navigation tools to select the desired file.

Before opening an ASCII text file, you will need to specify the format for the latitude and longitude. Three options are available: DD.DDDD, DD.MMSSSS and DDMM.SSSS. Click on the radio button for the desired format to select it, prior to clicking on the **Load File** button.

Note: The format for the ASCII text file must be Point Name, Latitude, Longitude, Elevation, Description, with each column separated by a comma.

Append from File

SOLO Office will also allow you to append waypoints from any of the above mentioned file formats to the existing waypoint list. Click on the **Append from File** button to display a standard Windows **Open** dialog box. There you can select the type of file that you wish to load and use the navigation tools to select the desired file.

Before opening an ASCII text file, you will need to specify the format for the latitude and longitude. Three options are available: DD.DDDD, DD.MMSSSS and DDMM.SSSS. Click on the radio button for the desired format to select it, prior to clicking on the **Append from File** button.

Note: The format for the ASCII text file must be Point Name, Latitude, Longitude, Elevation, Description, with each column separated by a comma.

Save to File

When you are satisfied with the waypoints in the waypoint list, you can store the waypoints to a waypoint file for download into your data collector. Click on the **Save to File** button to display a standard Windows **Save As** dialog box. Specify the file name and use the navigation tools to specify the data directory. Click on the **Save** button to create the waypoint file.

Prepare > Create Zone File

Most GPS equipment, such as SOLO, record *geodetic* coordinates. The horizontal geodetic coordinates are stored in latitudes and longitudes and the vertical coordinate is an *ellipsoid height*.

Since most GIS systems work with data in a standard plane coordinate system, expressed in northings, eastings, and elevations, the data must go through a transformation before it can be used. This conversion is one place where the Create Zone File and Geodetic Conversion functions in SOLO Office are useful.

Before getting into a detailed description of these functions, it may be helpful to review some information about projections and transformations.

Projection Systems

Ellipsoidal surface geometry is fairly complicated and, therefore, latitudes and longitudes are not convenient for distance and azimuth computations. Instead, some system of plane coordinates is most often used. In most cases, it is reasonable to treat a job site that occupies only a small area as if it were flat - no corrections need be made to account for the curvature of the earth.

It is often desirable, however, to provide ties to other control in the larger area surrounding the site. Such numerical ties might serve as the "glue" which binds the data in a GIS. The use of plane coordinates then presents a dilemma: it is not possible to create a rectangular grid on the earth's surface. Technically speaking, the surface of a sphere or ellipsoid is not *developable*. This is the same problem that confronts mapmakers, whose solution has been to first project the earth's surface onto another surface, such as a plane, cone, or cylinder, which *is* developable.

Standard projection systems, such as State Plane Coordinates in the United States, were created several decades ago to allow surveyors to work in a unified framework where plane trigonometric formulas *almost* apply. The word "almost" reflects the fact that all map projections are distorted; some corrections must be applied because the scale factor cannot be considered to be constant over a large area and meridian convergence cannot be ignored.

Because the precise WGS84 latitude and longitude of the base are required for alternative localization methods, plane coordinate input in SOLO Office must be in some system that is convertible to WGS84. Examples of such systems are Universal Transverse Mercator and State Plane. A custom (user-defined) projection can be used, but only if the exact relationship between this system and acceptable geodetic latitudes and longitudes is also provided.

Height Systems and Vertical Datums

Heights are somewhat more closely tied to the real (physical) world than are geodetic latitudes and longitudes. While it is possible to choose a best-fitting ellipsoid for a particular region based on arbitrary criteria, it is not possible, as plumbers know, to arbitrarily select the direction "up". In surveying and GIS work, height networks have traditionally been handled separately from horizontal networks. GPS is changing this.

GPS can be thought of as a precise three-dimensional measurement. All three measurements are given with respect to the WGS84 reference ellipsoid. Unfortunately for height determination, an ellipsoid is not (by itself) a suitable reference surface for elevations. Instead, an *equipotential* surface is used. All points on an equipotential surface are at the same height. A level tabletop is an example of such a surface. A ball placed on this tabletop will not roll unless it is pushed.

An example of an equipotential surface on earth is "mean sea level". This term is not used much anymore because it is rather imprecise. Instead, the term *geoid* is used. Heights referenced to

a surface that approximates the geoid are called *orthometric heights*. Heights output by GPS are called *ellipsoid heights*. These heights are related by

$$\text{Orthometric height} = \text{ellipsoid height} - \text{geoid height.}$$

If someone were able to construct a surface on the ellipsoid, a ball placed on this surface would, in general, tend to roll. In fact, it's possible that if the surface were tilted slightly, gravity could cause the ball to roll from a lower ellipsoid height to a higher ellipsoid height. The force of gravity, however, cannot cause a ball to roll from a lower orthometric height to a higher one. Therefore, orthometric heights are much more useful than are ellipsoid heights.

The exact relationship between the ellipsoid, the geoid, and the reference surface (datum) for elevations is rather difficult to determine. Due to modern computers and the availability of a great deal of gravity data, however, the ability to determine this relationship is increasing. This ability, along with the availability of modern leveling data, has prompted the establishment of new, more modern, height Datums. In North America, the National Geodetic Vertical Datum of 1929 (NGVD29) is being supplanted by the North American Vertical Datum of 1988 (NAVD88).

SOLO Office includes utilities to convert between ellipsoid and orthometric heights and between NGVD29, NAVD88 (VERTCON), and EGM96 in most of the United States.

Zone Files

While SOLO CE does offer a wide variety of map projections and datum to select from, it cannot possibly offer a solution to every circumstance. SOLO Office allows you to create custom coordinate conversions that you can download to your data collector for use in the field.

Defined zone parameters, when transferred to your data collector, allow you to display position data directly in the mapping format (map projection, rectilinear grid, vertical geoid datum) of the GIS system you are using for your project.

This is achieved in SOLO Office by referencing large databases of coordinate transformations and geoid data (too large to be loaded into the data collector) and analyzing the information for the mapping area you specify. SOLO Office uses this information to create a series of coefficients that are stored in a Zone file (.ZON). The Zone file is downloaded to the data collector and is selected when you create a project.

The coefficients in the Zone file are then used by SOLO CE to perform real-time conversions into the horizontal and vertical coordinate system you have specified, before they are displayed. Using a Zone file does not change the field GPS data that is stored in the project file. Your field data is always available without modification.

When you select the **Prepare > Create Zone File...** menu option, the **Create Zone File** dialog box will be displayed. There are three major steps to defining the geodetic zone information you wish to use for each project.

Select Transformation Method

Choose between 3-D Similarity and NGS NADCON. As a general rule, if you are working in North America, you should select NGS NADCON. If you are working outside North America, you should select 3-D Similarity. If necessary, you can also specify the folder where SOLO Office can locate needed NADCON and Geoid files.

Base Coordinate System

You will need to enter a base coordinate system and a reference point from which SOLO Office will calculate the transformation parameters to your working coordinate system. If you will be using GPS for data collection, the base coordinate system should be set as in the dialog box above (Geodetic, WGS84). You can then type in the Base Latitude, Base Longitude and Base Ellipsoid Height for your reference point.

Note: You should select a reference point within 10K of the area in which you will be working for the best results.

Survey Coordinate System

In this step you will specify the projection for your project. Select the Coordinate System, Horizontal Datum and Zone from the pull-down lists. You may also choose to transform the elevation data from Ellipsoid to Orthometric. In this case you will also need to specify the extent of the project.

Note: If you are transforming the elevation, you should limit the extent of the zone file to 10K whenever possible to ensure the most accurate elevation calculation. It may be necessary to create more than one Zone file to cover a large area such as a county.

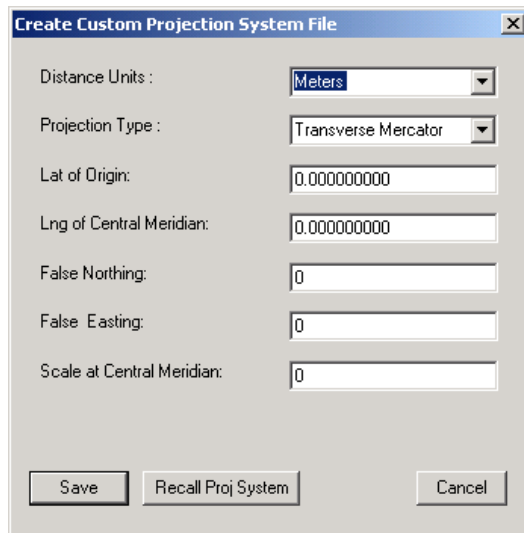
Click on the **Create** button to calculate the transformation parameters. The **Zone File** dialog box will be displayed. This dialog box will display the transformed coordinates of the reference point and the entered values for the reference point. If the results are satisfactory, click on the **Save Zone File** button to save the Zone file.

Custom Coordinate Systems

The procedure described above will allow you to create a Zone file for most of the common transformations. However, if you need to create a Zone file for a custom coordinate system (e.g. a local construction grid), there will be a few more steps.

The first step is to select **Custom** for the **Coordinate System**. If you are using the NGS NADCON method, you must then select between NAD 27 and NAD 83 for the Horizontal Datum. If you are using the 3-D Similarity method, you do not get to select a Horizontal Datum.

In either case, the next step is to create a Projection file by clicking on the **Create File ...** button. The **Create Custom Projection System File** dialog box will be displayed.



Distance Units

Select the desired distance units from the pull-down list.

Projection Type

Select the desired projection from the pull-down list.

Depending upon the selection in this field, the fields below Projection Type may change. Enter the necessary information into the displayed fields.

Click on the **Save** button to save the projection system.

If you have selected **NGS NADCON** as the transformation method in the **Create Zone File** dialog box, the projection will be saved with a file extension .PJ5.

If you have selected **3-D Similarity** as the transformation method, the projection will be saved with a file extension .CS5.

You may also click on the **Recall Proj System** button to recall an existing projection file for review or modification.

After the projection has been saved, the **Create Custom Projection System File** dialog box will be closed and you will be returned to the **Create Zone File** dialog box.

The next step is to select the projection file by clicking on the **Choose File** button. A standard **Open** dialog box will be displayed, listing all of the available projection files, depending upon

your selection for transformation method. Simply double-click on the desired projection file, or highlight it and click on the **Open** button. The file name and path should be displayed in the **Crd System File** field above the buttons.

Finally, select the **Elevation Type** and **Units** and, if necessary, the **Vertical Datum** and **Project Extent**.

Click on the **Create** button to calculate the transformation parameters. The **Zone File** dialog box will be displayed. This dialog box will display the transformed coordinates of the reference point and the entered values for the reference point. If the results are satisfactory, click on the **Save Zone File** button to save the Zone file.

Prepare > Geodetic Conversion

When you select the **Geodetic Conversion** option from the **Prepare** pull-down menu, the **Geodetic Conversion** dialog box will be displayed.

The **Geodetic Conversion** dialog box provides two functions: to perform a transformation from a file containing coordinates stored in a particular coordinate system and datum to a different coordinate system and datum and to view the coordinates for a single point after transforming it to a different coordinate system.

Geodetic Conversion

Region : ☐ International ☒ U.S.A. (NGS)

Choose Path to NADCON (*.las, *.los) and Geoid (*.geo) Files : C:\Program Files\TDS\Sol

Select Data Source: ☒ Single Point ☐ From File

Input

Coordinate System: Geodetic

Horizontal Datum : NAD 1927

Elevation Type: Ellipsoid

Vertical Datum: WGS 1984

Units : Meters

Latitude(DD.MMSSSS): 0.000000000

Longitude: 0.000000000

Ellipsoid Ht : 0.00000

Scale: Convergence:

Output

Coordinate System: Geodetic

Horizontal Datum : NAD 1927

Elevation Type: Ellipsoid

Vertical Datum: WGS 1984

Units : Meters

Latitude(DD.MMSSSS): 0.000000000

Longitude: 0.000000000

Ellipsoid Ht : 0.00000

Scale: Convergence:

Region

Select from International or USA.

Path to NADCON or Geoid Files

Click on the **Choose Path** button to select the folder where your NADCON (*.las, .los) or Geoid (.geo) files are located.

Data Source

Click the radio button for Single Point or From File.

Input/Output

Coordinate System

Select the coordinate system of the point(s) that you wish to convert. Select Geodetic if the position(s) are expressed in Latitude and Longitude.

Horizontal Datum

Select the horizontal datum of the point(s) that you wish to convert. Select WGS84 if the positions are expressed in Latitude and Longitude.

Elevation Type

Select Orthometric or Ellipsoid for the elevation type for the point(s) that you wish to convert.

Vertical Datum

Select the vertical datum for the point(s) that you wish to convert. The options available for this field will vary depending upon your selection for Elevation Type.

Units

Select the Height/Distance units for the point(s) that you wish to convert. Select from Meters, US Feet or International Feet.

Position

If you will be converting a single point, enter the horizontal and vertical position of the point in the available fields. Depending upon your selections above, you will either enter the Latitude and Longitude, or a Northing and Easting.

File Type

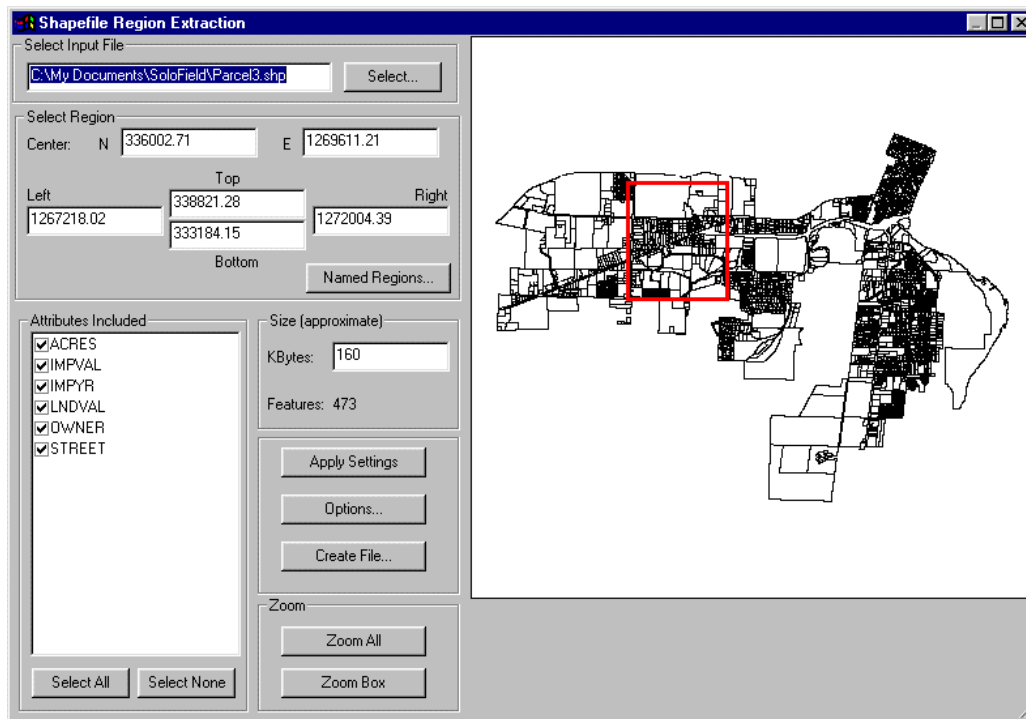
If you will be converting points from a file, select the file type from the pull-down list in the File Type field. Select from ASCII (NEZ-Lat/Lon OR ENZ-Lon/Lat), TDS .CR5 or Shapefile.

Click on the **Choose File** button to select the file that you wish to convert.

Prepare > Shapefile Extract

The **Prepare > Shapefile Extract** menu option allows you to extract a specific section of an existing Shapefile for easier use on your data collector. This tool is particularly useful for cases where your Shapefiles are too large to physically fit in the data collector, or when you want to work in a specific area.

When you select **Prepare > Shapefile Extract**, the **Shapefile Region Extraction** dialog box will be displayed.



Input File

Select the Shapefile from which you wish to extract a section by clicking on the **Select** button. Only one Shapefile may be selected at a time. However, you may save the coordinates of any section that you have selected for one Shapefile and apply them to another Shapefile, as described below under **Named Regions**.

Select Region

This section of the dialog box displays the coordinates of the center point of the region selected for extraction, as well as the coordinates for the four corners.

Size

This section displays an estimate of the size of the Shapefile that will be created by the extraction process, including the selected attributes.

Attributes Included

This section lists all of the available attributes for the selected Shapefile. The default is to select all of the available attributes for inclusion with the new Shapefile. However, you may deselect attributes that you do not wish to include with the new Shapefile by clicking on the checkbox next to the attribute name and then clicking on the **Apply Settings** button. You may also use the **Select All** and **Select None** buttons to speed up the selection process.

Shapefile Preview

This section of the dialog box displays a graphical view of the selected Shapefile, as well as the region selected for extraction.

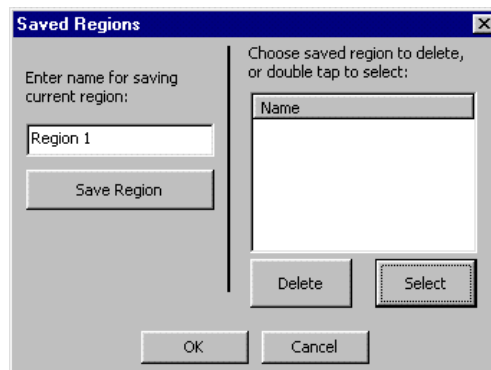
You may select a region of the selected Shapefile for extraction in three ways:

- 1) Drawing a “rubber-band” box with your mouse on the Shapefile preview. The coordinate values of the box will be displayed in the **Select Region** section and an estimate of the size of the new Shapefile will be displayed in the **Size** section.
- 2) Type in new coordinates to one of the displayed fields and click on the **Apply Settings** button. This will cause the selected area to be moved to match the input location. For example, if you typed new coordinates into the Center North coordinate box, the entire selection box would be moved to accommodate the change.
- 3) Type in a new value to the Size field and click on the **Apply Settings** button. This will cause the selection box to shrink or grow according to the change. The coordinates for the center of the selection box will not change.

In addition, selecting or deselecting attributes can change the size of the selection box. The Size of the selected area and the center coordinates of the box will remain the same, but the perimeter of the selected area will expand or contract when the **Apply Settings** button is clicked.

Named Regions

You can save the coordinate values of the selected region for later application to additional Shapefiles by clicking on the **Named Regions** button. The **Saved Regions** dialog box will be displayed.



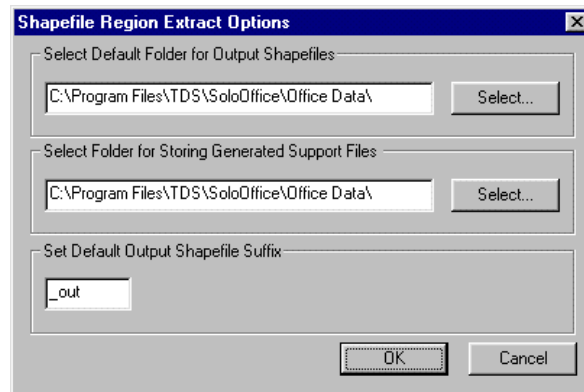
Enter a name for the selected region and click on the **Save Region** button. The region name should then appear in the Name list.

To select an existing region, highlight the name in the name list and click on the **Select** button.

To delete a region from the name list, highlight the name and click on the **Delete** button.

Click on the **OK** button to return to the **Shapefile Region Extraction** dialog box.

Extraction Options



You may set the output folder(s) for the extraction process and specify the output file suffix by clicking on the **Options** button. The **Shapefile Region Extract Options** dialog box will be displayed.

You may set the folder that your new Shapefiles will be stored in by clicking on the **Select** button. You may additionally set the folder where the extraction support files will be stored.

Note: The support files can be large, and if you will not be using the original Shapefile again, you may want to delete the support files when you are finished.

A default file suffix of “_out” will be applied to the new Shapefile (for example: parcel3_out.shp). You may change this suffix in the **Suffix** field.

Click on the **OK** button to return to the **Shapefile Region Extraction** dialog box.

When you are satisfied with the selected region and the extraction options, click on the **Create File** button. A standard Windows **Save As** dialog box will be displayed showing the data folder specified in the **Extract Options** dialog box and the original Shapefile filename with the suffix added. Click the **Save** button to create the new file.

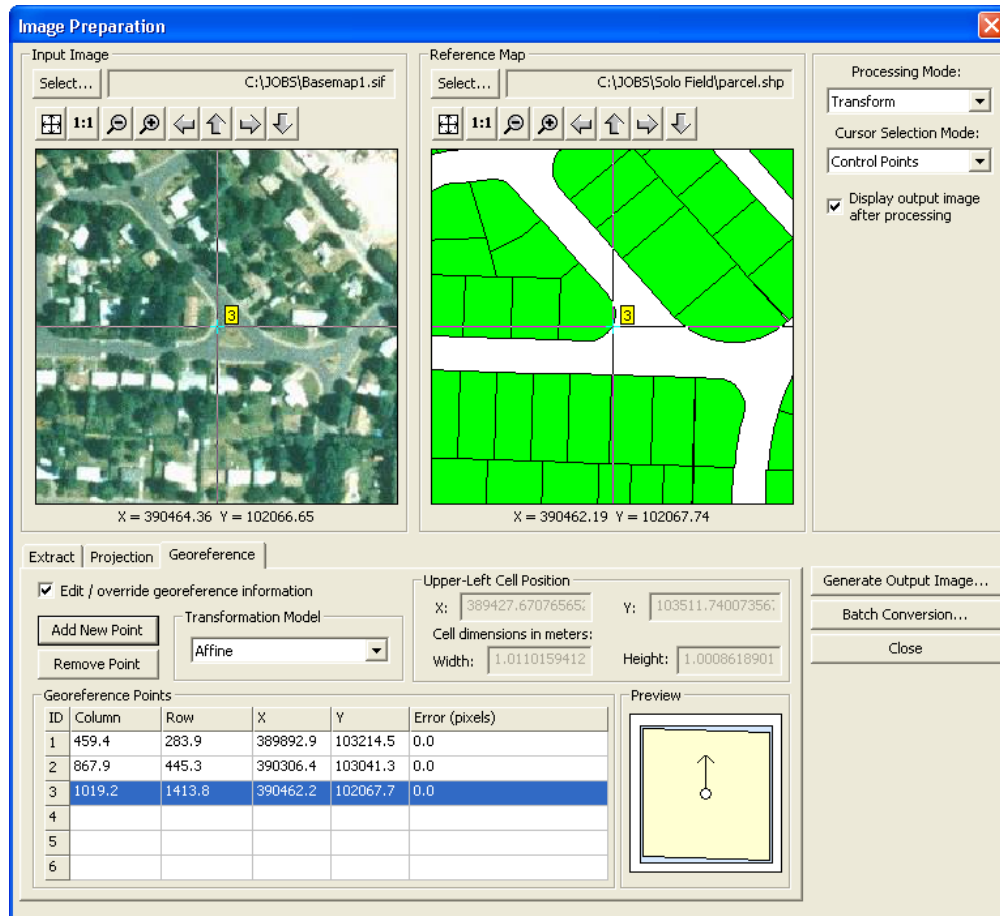
Zoom Options

Zoom All will scale the Shapefile so that all data points will be visible. **Zoom Box** allows you to drag a box around the desired area in the Shapefile preview and zoom in on the area defined by the drawn box.

Prepare > Image Preparation

The **Prepare > Image Preparation** menu option allows you to prepare your background images for use in SOLO CE. The preparation process will generate a new image in TDS’ compressed SIF format. When in **Copy/Extract** mode, you can extract a specific region of an image, set Georeference information for the image and set the projection information for the image. When in Transform mode you can open an image and a reference map and use the routine to scale and rotate the reference map to properly overlay on the input image.

When you select **Prepare > Image Preparation**, the **Image Preparation** dialog box will be displayed.



Input Image

Select the Input Image that you wish to prepare for field use by clicking on the **Select** button. Select from MrSID® format (*.sid), Shapefile (*.shp), MapInfo (*.mif), AutoCAD (*.dxf), MicroStation (*.dgn), TDS (*.cr5), UDF (*.udf), SOLO Image (*.sif), GEO (*.tif), JPEG (*.jpg), JPEG2000 (*.jp2, *.jpx, *.jpf), ER Mapper (*.ewc), DOQ (*.doq), and Waypoint files (*.way) file formats. Only one image may be selected at a time.

Extract Tab

The Extract tab contains the columns and lines of the SIF image that will be generated, as well as an estimate of the size of the image. When the Input Image is first selected, the entire image will be included in the Extract Region. You may change the area to be included in the extract region as described below. If you wish to force the inclusion of the entire image, check the box labeled **Output whole image**.

Projection Tab

If the Input Image does not have projection information associated with it, this section will allow you to specify the projection information. Select the **Coordinate System**, **Horizontal Datum** and **Zone** from the available lists. If you will be using a Zone file to specify the projection, or if the projection cannot be specified, check the box labeled **Use Zone File or Undefined Projection**.

The screenshot shows the 'Projection' tab of a software interface. It has three sub-tabs: 'Extract', 'Projection', and 'Georeference'. The 'Projection' tab is active. It contains a checkbox 'Edit Projection Settings' which is checked. Below it is a 'Method' section with two radio buttons: 'U.S.A., (NGS)' (selected) and 'International'. Below that is a 'Parameters' section with three dropdown menus: 'Coordinate System' (set to 'State Plane 1927'), 'Horizontal Datum' (set to 'NAD 1927'), and 'Zone' (set to 'Oregon North'). At the bottom is a checkbox 'Use zone file or undefined projection' which is unchecked.

Georeference Tab

This tab allows you to edit or override the Georeference information associated with the Input Image. To activate this feature, you must check the box labeled **Edit / override georeference information**. You may then enter the upper left pixel coordinates and the pixel dimensions in meters.

The screenshot shows the 'Georeference' tab of the same software interface. It has three sub-tabs: 'Extract', 'Projection', and 'Georeference'. The 'Georeference' tab is active. It contains a checkbox 'Edit / override georeference information' which is checked. Below it are two buttons: 'Add New Point' and 'Remove Point'. To the right of these buttons is a 'Transformation Model' dropdown menu set to 'Affine'. To the right of the 'Add New Point' button is a section for 'Upper-Left Cell Position' with 'X' and 'Y' input fields. Below that is a section for 'Cell dimensions in meters' with 'Width' and 'Height' input fields. Below these is a table titled 'Georeference Points' with columns: ID, Column, Row, X, Y, and Error (pixels). The table has 6 rows, with row 4 highlighted. To the right of the table is a 'Preview' window showing a yellow square with a crosshair and a small circle.

ID	Column	Row	X	Y	Error (pixels)
1	459.4	283.9	389892.9	103214.5	6.4
2	867.9	445.3	390306.4	103041.3	5.4
3	1019.2	1413.8	390462.2	102067.7	2.0
4	105.3	719.3	389551.5	102765.9	3.1
5					
6					

This tab is also used to scale and rotate a reference map to properly overlay onto the input image and then save the information to a SOLO image file. To do this, make sure the **Processing Mode** is set to **Transform** and the **Cursor Selection Mode** is set to **Control Points**.

Align the crosshairs in each image to the same point and click the **Add New Point** button. Continue adding at least two more points. Try to use points that are far from each other and not on the same line.

Once the points are added, click **Generate Output Image** to open the Confirm Operation Settings dialog box. Select the lower radio button and tap **OK** to save the file.

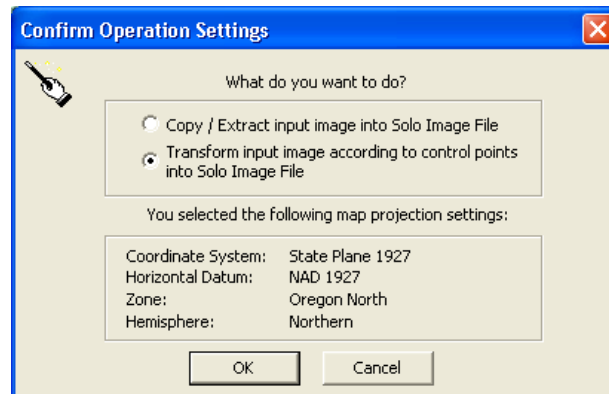


Image Preview

This section of the dialog box displays the Input Image. When the Input Image is first selected, the entire image is displayed with a red border. The red border represents the Extract Region of the image (the region of the Input Image that will be included when the Output Image is generated).

You may use the Toolbar at the top of the Image Preview region to zoom and pan the display of the image. You may also pan the image by clicking and dragging with your mouse.

You may change the Extract Region of the Input Image in two ways:

- 1) Moving the red border that defines the Extract Region within the Image Preview. As you move your mouse over the red border, the mouse icon will change from the “pan” mode to the “drag” mode, indicated by direction arrows. Click and hold to drag one of the four borderlines.
- 2) Typing new values into the Extract Region fields. When you edit a value (such as **Starting Line**), SOLO Office will automatically move the red border to the appropriate position in the Image Preview and adjust the **Output Image Size** field.

To modify the quality of the input image, select **Output Image Quality** and select between High, Medium and Low quality.

When you are satisfied with the Extract Region, Georeference data and Projection Settings, click on the **Generate Output Image** button. A standard Windows **Save As** dialog box will be displayed.

Prepare > Print Layout

When you select **Prepare > Print Layout**, the **Layout Setup** dialog box will be displayed which will allow you to select a printer, paper size, page orientation, etc. Once the dialog box is filled in as desired, click **OK** to send the document to the selected printer.

The Edit Menu

This section of the manual will discuss the different ways in which you may edit collected data, and data contained within your certain types of basemaps.

Edit > Stylus Use

Tapping this option will display a second menu that allows you to select from the available stylus use options:

Manual X,Y

This option allows you to select a location within the Map View using the stylus. SOLO Office - Forest Edition will automatically calculate the X and Y coordinate values of the selected point.

Basemap Feature

This option allows you to select a feature in the active layer of the basemap. Tapping on the feature with the stylus will pop up a label for that feature, and also allow you to access the associated database.

Whole Feature

This option allows you to select an entire feature by tapping anywhere on the feature, including a node.

Delete Multiple Points

This option allows you to select multiple points on the UDF layer using the stylus and then delete the selected points by tapping **Edit > Delete**. If you select a point inadvertently, simply tap it again to unselect it. When this stylus option is selected, some menu options will be disabled to prevent deleting data inadvertently.

Logged Data

This option allows you to select previously logged data or waypoints with the stylus. Tapping twice on the desired feature will call the **Logged Data Info** screen that displays the coordinate, feature and attribute information for that feature.

Freehand Redlining

This option allows you to add redlining and notes to a “CAD” layer in the Map View. The redlining function is discussed in more detail in the Redlining section of this manual.

Feature Editing

This option allows you to edit the position of basemap features in the active basemap layer. The feature editing function is discussed in more detail later in this manual.

Each of these stylus use options can also be accessed through the buttons displayed in the Mode Toolbar.

Edit > Delete

You may use the **Edit > Delete** menu option to delete points, features and redlining objects from the current project. Points, features and objects that are deleted will be permanently removed from the project.

DELETED POINTS AND OBJECTS CANNOT BE RECOVERED!

1. Make sure that the stylus use is set to logged data by selecting **Edit > Stylus Use > Logged Data** or by tapping the **Stylus Logged Data** button in the Mode Toolbar.
2. Highlight the point, feature or redlining object that you wish to delete by tapping on it in the Map View. To highlight a single node in a Line or Area feature, tap directly on the node. To highlight the entire Line or Area feature, tap on the line joining the nodes together. To highlight a redlining object, tap anywhere on the object.
3. Select **Edit > Delete**. You will be prompted to confirm the deletion. Upon confirmation, the selected point > feature will be deleted from the project

You may also delete points using the method below:

1. Make sure that the stylus use is set to logged data by selecting **Edit > Stylus Use > Logged Data** or by tapping the **Stylus Logged Data** button on the Mode Toolbar.
2. Select the point you wish to delete by double tapping on it in the Map View or by selecting **Edit > Logged Points** and then double-tapping the point from the list in the **Logged Items** screen. The **Logged Data Info** screen will then be displayed.
3. Tap on the **Delete** button to remove the point from the current project.
4. You will be prompted to confirm that you wish to delete the point. Tap the **Yes** button to confirm the deletion and return to the Map View.

Edit > Move

This function allows you to change the location of a logged point or an ESRI Shapefile basemap feature. There are several methods available for moving a point or basemap feature, each of which is detailed below.

Moving a Point with GPS

1. Make sure that you are in GPS logging mode by tapping on the **Log GPS** button in the Mode Toolbar, or by selecting **Log > Log With > GPS**.
2. Make sure that your stylus is in logged data mode by tapping on the **Stylus – Logged Data** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Logged Data**.
3. Select the point that you wish to move by tapping on it in the Map View. The point will be highlighted.
4. Occupy the new position where you want the point to be located and select **Edit > Move**. The **Select Point to Relocate** screen will be displayed.
5. A list of all the logged points from the current project is displayed. The point that you selected will be highlighted. If you wish to select a different point, you may double tap on a new point from the list. Otherwise, tap the **OK** button. The **Relocate Point** screen will then be displayed.

6. You will be required to collect the minimum number of GPS epochs established in the **Signal Settings** screen (Page 20). When the minimum number of epochs has been collected, tap the **OK** button to move the point. The existing point will be given the coordinates of your current location.
7. You can restart the averaging of your current GPS position by tapping on the Delete button.

Moving a Point Using the Touch Screen

1. Make sure that you are in Logged Data mode by tapping on the **Stylus – Logged Data** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Logged Data**.
2. Make sure that you are in Manual logging mode by tapping on the **Log Manual** button on the Mode Toolbar or by selecting **Log > Log With > Manual**.
3. Select the point that you wish to move by tapping on it in the Map View. The point will be highlighted.
4. Switch to Manual stylus mode by tapping on the **Stylus – Manual X,Y** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Manual**.
5. Tap on the Map View where you want the selected point to be located and then select **Edit > Move**. The **Select Point to Relocate** screen will be displayed.
6. A list of all the logged points from the current project is displayed. The point that you selected will be highlighted. If you wish to select a different point, you may double tap on a new point from the list. Otherwise, tap the **OK** button. The **Relocate Point – Manual** screen will then be displayed.
7. The coordinates of the new location selected with the stylus in the Map View will be displayed in this screen. If the coordinates are satisfactory, tap the **OK** button to move the point. The existing point will be given the coordinates of your current location.

Moving a Point by Typing in new Coordinates

1. Make sure that the stylus use is set to logged data by selecting **Edit > Stylus Use > Logged Data** or by tapping the **Stylus Logged Data** button on the Mode Toolbar.
2. Select the point whose location you wish to move by double-tapping on it in the Map View or by selecting **Edit > Logged Points** and then selecting it from the list in the **Logged Items** screen. The **Logged Data Info** screen will be displayed.
3. Tap on the **Edit** button to display the **Edit Point Location** screen.
4. Enter the new coordinates and the elevation by highlighting the desired fields and typing in the new values.
5. When you are satisfied with the entered data, tap on the **OK** button to accept the changes. You will be prompted that the changes will be made and returned to the **Logged Data Info** screen.
6. Tap the **OK** button to return to the Map View.

Moving a Basemap Point using GPS

1. Make sure that you are in GPS logging mode by tapping on the **Log GPS** button in the Mode Toolbar, or by selecting **Log > Log With > GPS**.
2. Make sure that your stylus is in basemap mode by tapping on the **Stylus – Basemap Feature** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Basemap Feature**.
3. Select the basemap point that you wish to move by tapping on it in the Map View. The selected feature will be highlighted. For line or area features, the closest node to the selection point will also be highlighted.
4. Occupy the new position where you want the point to be located and select **Edit > Move**. The **Select Destination Location** screen will be displayed.
5. Select the GPS page by tapping on the GPS label, if it is not currently displayed. Your current GPS position will be displayed on this page.
6. You will be required to collect the minimum number of GPS epochs established in the **Settings > Signal** screen (Page 20). You may discard any collected epochs and start the averaging process over by tapping on the **Delete** button in the GPS position window.
7. When the minimum number of epochs has been collected and you are satisfied with the position, tap the **OK** button. The **Move Basemap Point** screen will be displayed.
8. Select the radio button labeled “move selected point” to move only the highlighted node of a line or area feature.
9. Select the radio button labeled “Shift entire feature” to move the entire line or area feature, with the highlighted node being placed at the new location.
10. You may also choose to move co-incident basemap points that are in the same layer. For example, if you select to move a corner point for a parcel, you may also move the same corner point for the adjacent parcel by checking this box. All basemap points within the specified search radius will be moved to the new location.
11. Tap the **Move** button to move the basemap point or feature. You will be prompted to confirm the change in location.

Note: In order to change the location of a Shapefile feature, the .SHX file for that basemap layer must be located in the same folder on your data collector as the Shapefile.

Moving a Basemap Point Using the Touch Screen

1. Make sure that you are in Basemap mode by tapping on the **Stylus – Basemap Feature** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Basemap Feature**.
2. Select the basemap point that you wish to move by tapping on it in the Map View. The selected feature will be highlighted. For line or area features, the closest node to the selection point will also be highlighted.
3. Select **Edit > Move**. The **Select Destination Location** screen will be displayed.
4. Select the Map page by tapping on the Map label, if it is not currently displayed. Your current project Map View will be displayed on this page.

5. Make sure that you are in Manual stylus mode by tapping on the **Menu** button and selecting **Stylus Use > Manual X,Y**.
6. Select the location to which you wish to move the basemap point by tapping on the Map View, and then tap the **OK** button.
7. The **Move Basemap Point** screen will be displayed. Tap the **Move** button to move the basemap point and return to the Map View.

Moving a Basemap Point by Typing in new Coordinates

1. Make sure that you are in Basemap mode by tapping on the **Stylus – Basemap Feature** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Basemap Feature**.
2. Select the basemap point that you wish to move by tapping on it in the Map View. The selected feature will be highlighted. For line or area features, the closest node to the selection point will also be highlighted.
3. Select **Edit > Move**. The **Select Destination Location** screen will be displayed.
4. Select the Location page by tapping on the **Location** label, if it is not currently displayed.
5. Enter the new location for the basemap point, in the projection for your current project, and then tap the **OK** button.
6. The **Move Basemap Point** screen will be displayed. Tap the **Move** button to move the basemap point and return to the Map View.

Moving a Basemap Point to an Existing Point

The **Edit > Move** function will allow you to move a basemap point to the location of an existing point. The existing point can be a logged data point, a waypoint or another basemap point.

1. Make sure that you are in Basemap mode by tapping on the **Stylus – Basemap Feature** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Basemap Feature**.
2. Select the basemap point that you wish to move by tapping on it in the Map View. The selected feature will be highlighted. For line or area features, the closest node to the selection point will also be highlighted.
3. Select **Edit > Move**. The **Select Destination Location** screen will be displayed.
4. To move the basemap point to the location of another basemap point in the same layer, select the **Map** page by tapping on the Map label.
5. Make sure that you are in basemap feature stylus mode by tapping on the **Menu** button and selecting **Stylus Use > Basemap Feature**.
6. Select the basemap point to which you wish to move the selected basemap point by tapping on the Map View, then tap the **OK** button.
7. To move the basemap point to the location of a logged data point, select the **Point** page by tapping on the Point label.
8. Select the logged data point to which you wish to move the basemap point by double-tapping it.

9. Alternatively, you may select the logged data point in the Map page by tapping the **Menu** button, selecting **Stylus Use > Logged Data** and then tapping once on the desired point in the Map View.
10. To move the basemap point to the location of a waypoint, select the **WayPoint** page by tapping on the WayPoint label.
11. Select the Waypoint to which you wish to move the basemap point by double-tapping it.
12. Alternatively, you may select the Waypoint in the Map page by tapping the **Menu** button, selecting **Stylus Use > Logged Data** and then tapping once on the desired Waypoint in the Map View.
13. The **Move Basemap Point** screen will be displayed as described earlier. Tap the **Move** button to move the basemap point and return to the Map View.

Moving a Basemap Point using the Stylus

You may also move a basemap point using the stylus when you are in Feature Edit mode.

1. Make sure that you are in Basemap Edit mode by tapping on the **Stylus – Basemap Edit** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Feature Editing**.
2. Select the basemap point that you wish to move by tapping on it in the Map View. The selected feature will be highlighted. For line or area features, all of the nodes in the feature will be displayed and the closest node to the selection point will be highlighted with a large circle.
3. Tap and hold on the highlighted node, then drag the stylus to the new location. As you drag the stylus, a line will be displayed connecting the current stylus position to the previous node location.
4. When your stylus is at the desired location, lift the stylus. The basemap feature, or node, will be moved to the location.

Edit > Copy to UDF Feature

This function allows you to create a feature from a basemap feature or CAD object within your project. CAD objects are created through the Redlining function (Page **Error! Bookmark not defined.**), the GPS Track function (Page **Error! Bookmark not defined.**) and the Line Offset function (Page 68).

Copy a CAD object to a UDF feature

1. Make sure you are in Logged Data mode by tapping on the **Stylus – Logged Data** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Logged Data**.
2. Select the CAD object that you wish to copy into a feature by tapping on it in the Map View. The selected object will be highlighted.
3. Select **Edit > Copy to UDF Feature**. The **Edit Object** screen will be displayed.

4. The **Edit Object** screen will display a preview of the new feature, as it will be created in your project, with the number of nodes that are present in the original CAD object being displayed.
5. Use the slider bar to reduce the number of nodes in the feature. The further to the right that you move the bar, the more nodes will be removed.
6. In the example to the right, removing all but the beginning and ending nodes form a straight line.
7. Once you are satisfied with the look of the feature, tap on the **OK** button. The **Select Feature to Log** screen will be displayed.
8. Select the feature and enter any attribute information. Tap on the **OK** button to create the new feature.

Copy a basemap feature to a UDF feature

1. Make sure you are in Basemap mode by tapping on the **Stylus – Basemap Feature** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Basemap Feature**.
2. Select the basemap feature that you wish to copy into a UDF feature by tapping on it in the Map View. The selected object will be highlighted.
3. For a line or area basemap feature, you will be prompted with the number of data points that will be converted. Tap on the **Yes** button to continue.
4. You will be asked if you would like to specify the Feature type. If you select **Yes**, the attributes currently associated with the basemap feature will be discarded and you will select a feature from the Feature file and enter the attribute data for that feature type.
5. If you select **No**, then a new feature will be created in your project. The feature name will be the file name of the basemap layer and the attributes will be the attributes of the basemap feature.

Note: The newly created feature will not be added to the Feature file, but it will be stored in the UDF project file.

Edit > Line Editing > Reverse Line

This function allows you to reverse the order of the points collected as part of a Line or Area feature.

1. Make sure you are in Logged Data mode by tapping on the **Stylus – Logged Data** button in the Mode Toolbar, or by selecting **Edit > Stylus Use > Logged Data**.
2. Select the Line or Area feature that you wish to reverse by tapping on it in the Map View. The selected feature will be highlighted
3. Select **Edit > Functions > Reverse Line**. The sequence of the points making up the line or area feature will be reversed.

Edit > Line Editing > Line Offset

This function allows you to create a duplicate of a line or area feature at a specified distance from the original line or area feature. The duplicate will be created as a CAD object.

1. Select the line or area feature that you wish to offset by tapping on it once in the Map View. The selected feature will be highlighted.
2. Select **Edit > Functions > Line Offset**. The **Line Offset** screen will be displayed.
3. There are three offset options available: Left, Right or Both. Select the option you wish to use by tapping the appropriate radio button.
4. Enter the offset distance in the **Offset Distance** field.
5. Tap **OK** to create the duplicate, offset by the specified distance from the original Line or Area feature and return to the Map View.

Edit > Logged Data > Logged Points...

This option allows you to view the details for any logged point in the current project.

When you select **Edit > Logged Points**, a list of all of the logged points are displayed in the **Logged Items** screen. Each logged point is displayed individually.

You may sort the display of the logged points by tapping on the column labels.

Double tap on the desired point to display the information related to that point in the **Logged Data Info** screen.

The **Logged Data Info** screen lets you edit the feature and location information for the point, reorder the point within a Line or Area feature, or delete the point.

You can also access the **Logged Data Info** screen by double tapping the desired point in the Map View.

Edit > Logged Data > Logged Features...

When this option is selected, the logged features from the current project are displayed in the **Logged Items** screen. The points associated with a Line or Area feature are not displayed individually.


If a particular feature consists of multiple points, only the last point logged for that feature is initially shown. You may sort the display of the logged points by tapping on the column labels.

Double tap on the desired feature to display the information related to that feature in the **Logged Data Info** screen, as described above.


The View Menu

The options available from the **View** menu allow you to view the details of selected points or features, and let you customize what is shown in the Map View. Each option is explained below.


View > Zoom Everything

Tapping this option, or the  button, will scale the Map View so all the points, waypoints, basemap features, raster images and redlining will be visible.

View > Zoom Logged Data

Tapping this option, or the  button, will scale the Map View so that all logged data points, waypoints and redlining will be visible.

View > Zoom to Active Layer

Tapping this option, or the  button, will scale the Map View so that the entire active basemap layer is displayed.


View > Zoom To Current Location


Tapping this option will pan the Map View so your current position will be in the center. This option does not affect the scale of the Map View display.

View > More Zoom Selections

This submenu contains more zoom options.

View > More Zoom Selections > Window


Tapping this option, or the  button, allows you to zoom to a box that you draw in the Map View using the your stylus.

- First select **View > Zoom > Window**, or tap the  button.
- Drag a box around the desired area in the Map View.
- Once the stylus is lifted from the screen, the Map View will zoom in on the area defined by the drawn box.


View > More Zoom Selections > Zoom In

Tapping this option, or the  button, will zoom in on the Map View by approximately 30%.


View > More Zoom Selections > Zoom Out

Tapping this option, or the  button, will zoom out on the Map View by approximately 30%.

View > More Zoom Selections > Previous

Tapping this option, or the  button, will revert the Map View to the previous scale and location display.

View > More Zoom Selections > To Point

Tapping this option or the  button will open the Zoom To Point screen. This screen displays all the logged points and waypoints in the current project. Double tap on any point and the Map View will pan so the selected point will be positioned in the center. This option does not affect the scale of the Map View display. In this screen you may also type in the coordinates that you wish to pan to.

Tip: You can pan around in the Map View by dragging the stylus across it.


View > More Zoom Selections > To Images

Tapping this option will scale the Map View so that the entire active raster image is displayed.


View > More Zoom Selections > Image Scale 1:1

Tapping this option will adjust the Map View so that the active raster image is centered in the display, but does not change the current scale of the display.

View > More Zoom Selections > Saved Views

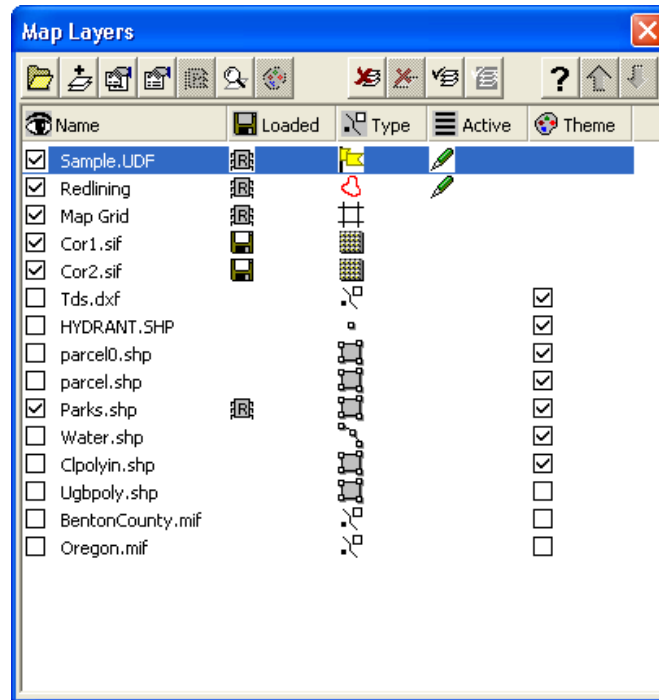
Tapping this option, or the  button, will display the **Saved Map Views** screen. This screen allows you to select a previously saved Map View, or to save the current Map View for later recall.

View > More Zoom Selections > Refresh

Tapping this option or the  button will refresh the Map View, and remove any irregularities in the display that can come from panning.

View > Map Layers

Tapping this option will display the **Basemap Layer Control** screen.



There are several buttons on this screen that are used to perform various tasks. From this screen you can load or unload basemap layers and images, change basemap viewing options, change basemap labeling options, etc. For ease of discussion, this manual will first address the process for displaying basemaps and the associated options, and then discuss the process for displaying images and the associated options.

Displaying a Basemap

SOLO Office - Forest Edition provides the capability for you to display basemaps from Map View, ESRI Shapefiles, MapInfo MIF files, AutoCAD DXF files, Microstation DGN files, SOLO Waypoint, or SOLO UDF files. You will also have access to the database information associated with the basemap files and, in the case of ESRI Shapefiles, the ability to edit the database and location of the basemap features.

Note: In order to access the database information for ESRI Shapefiles, the .DBF and the .SHX files corresponding to the Shapefile must be located in the same folder as the Shapefile in your data collector and must not be read-only.


Note: In order to access the database information for MapInfo MIF files, the .MID file corresponding to the MIF file must be located in the same folder as the MIF file on your data collector.

Note: The **Basemap Layer Control** screen also allows you to load and display raster images. This procedure is discussed below.


The Basemap Layer Control Screen

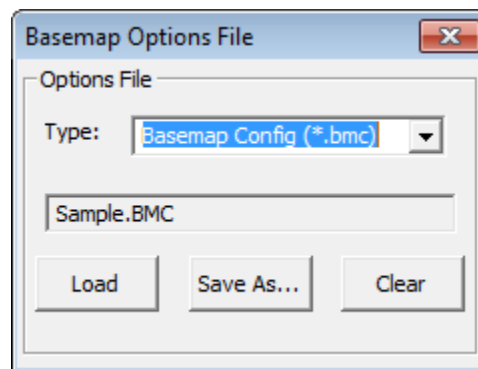
The **Basemap Layer Control** screen displays the basemap layers that are currently assigned to your project.

In this screen you can add and remove layers, turn on/off the layers displayed in the Map View, set the order of display and adjust the properties of the layers.

Tapping on the **Help** button  will display the **Basemap Layer Help** screen, indexing the functions associated with the various buttons in the **Basemap Layer Control** screen.


Basemap Options File

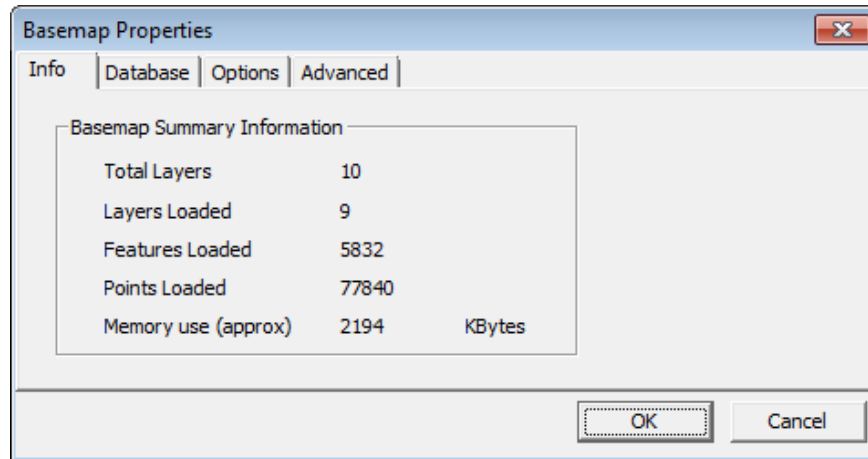
Tap **Save**  > **Load** if you want to use a basemap option file to load a previously created set of options. The **Basemap Option File** screen will be displayed.



From here you can load an existing Basemap Option File, save a new file or clear the current file.

Basemap Properties

You can edit the general properties of all your viewable layers by tapping on the **All Layers Properties**  button. The **Basemap Properties** screen will be displayed.

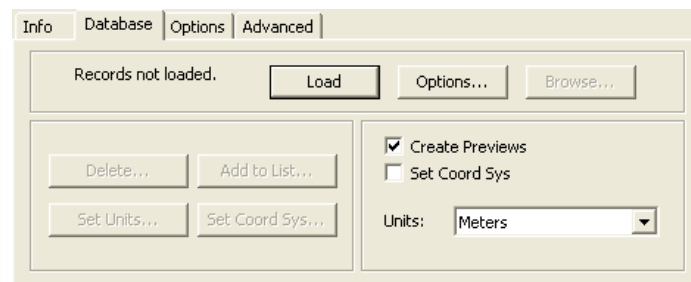


The Basemap Properties Screen

There are four pages available in the **Basemap Properties** screen.

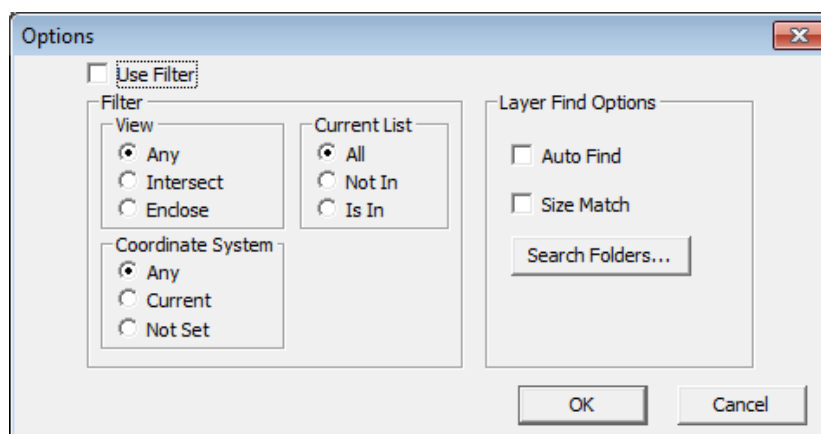
The **Info** page provides a summary of the basemap layers that are loaded, including the number of features and points that are loaded, and an approximation of how much memory is being used to load and display the layers.

The **Database** page lets you load a listing of all the basemap layers on your data collector. This list can then be used to rapidly add basemap files to your project.



The list is loaded by referencing the .BLI file that is created when a basemap layer is loaded in SOLO Forest. If you transferred files from SOLO Office using a .SPF file, the .BLI files will have been transferred as well.

Tap the **Options** button to set filters for the .BLI files that will be loaded. The **Options** screen will be displayed.



Check the box labeled **Use Filter** to apply the filters in this screen. You can filter the .BLI search based on three criteria; **View**, **Current List** and **Coordinate System**.

View

Select **Any** to load all basemap layers. Select **Intersect** to load only those layers that intersect the current Map View extents. Select **Enclose** to load only those layers that are completely contained within the current Map View extents.

Current List

Select **All** to load all basemap layers. Select **Not In** to load only those basemap layers that are not in the current list displayed in the **Basemap Layer Control** screen. Select **Is In** to load only those basemap layers that are currently displayed in the list.

Coordinate System

Select **Any** to load all basemap layers. Select **Current** to load only those basemap layers that use the same coordinate system as the current project. Select **Not Set** to load only those basemap layers that have no set coordinate system.

You can let SOLO Office - Forest Edition search the entire contents of your data collector and automatically find basemap files by checking the box labeled **Auto Find**. Checking the **Size Match** box will search for only those basemap layers that are roughly the same size as the currently listed basemap files.

To set specific folders that you wish SOLO Office - Forest Edition to search, tap on the **Search Folders** button. The **Folder List** screen will be displayed.

Tap on the **Add** button to add a new folder to the search. Tap on the **Remove** button to remove the highlighted folder from the search.

Check the box labeled **Include Sub-Folders** to include any sub-folders of the selected folders in the search.

Tap the **OK** button to return to the **Options** screen.

Once all of the search filter options have been set, tap the **OK** button to return to the **Database** page.

Tap the **Browse** button to display a preview of the loaded basemap layers. The **Basemap Layer Database Browser** screen will be displayed.

A preview of each loaded basemap layer will be displayed in the left side of this screen. Tap the arrow keys below the preview to toggle through the loaded layers. The coordinate system for the current layer will be displayed in the upper right corner.

To find the path to the current layer, tap the **Find** button (if **Auto Find** has been checked in the **Options** screen, this step is not necessary).

To add a layer to the list of layers in the **Basemap Layer Control** screen, tap the **Add** button.

If the coordinate system and units information is not correct for this layer, you may delete the .BLI file where this data is stored by tapping the **Delete** button.

Tap **Cancel** to return to the **Database** page.

Tap the **Delete** button to delete the .BLI files for all of the loaded layers (the layers themselves will not be deleted).

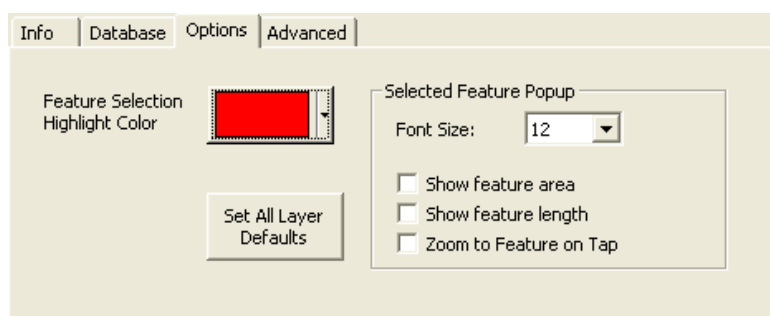
Tap the **Set Units** button to set the units for all of the loaded layers.

Tap the **Add to List** button to add all of the loaded layers to the list of basemap layers displayed in the **Basemap Layer Control** screen.

Tap the **Set Coord Sys** button to set the coordinate system for all the loaded layers. If you check the box labeled **Create Previews**, a preview for each layer will be created automatically when the layer is loaded.

If you check the box labeled **Set Coord Sys**, each layer will be set to the coordinate system of the current project as it is loaded. The units specified in the **Units** field will be used.

The **Options** page lets you set the color that will be used to highlight selected basemap features in the Map View.



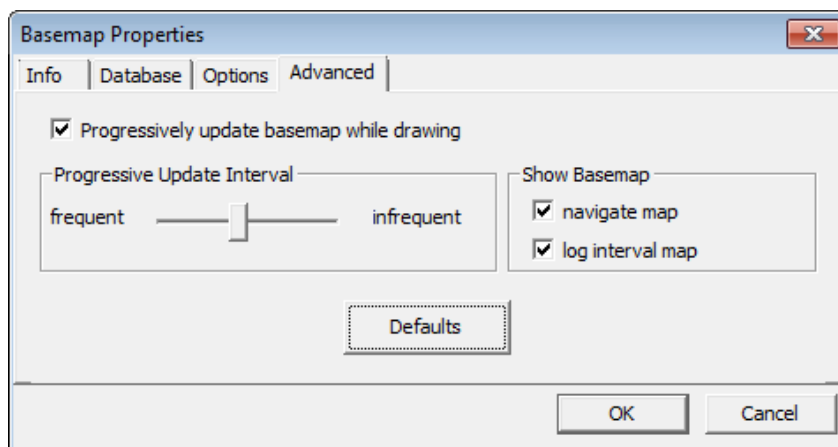
Select the **Font Size** for the basemap feature pop-up label from the provided list.

You can also choose to display the area and length of area features, or the length of line features, in the pop-up label by checking the appropriate boxes.

Check the **Zoom to Feature on Tap** box to automatically zoom in on a selected basemap feature.

Tap on the **Set All Layer Defaults** button to return the settings for every loaded layer to the default settings.


The **Advanced** page lets you set the rate at which the basemap display will be updated while zooming or panning. A faster setting will require more memory use.



You can also specify if you would like to have the basemap displayed during the navigation routines and when logging by interval.

Tapping the **Defaults** button will return the settings to the default configuration show in the image to the left.


Removing Layers

To remove a layer from the list, highlight the layer and then tap the **Remove Layer**  button. A prompt will appear to ensure your selection.



You can also remove all layers by Tapping on the **Remove All Layers**  button.

Viewing Layers


To make a layer viewable on the map, select the checkbox to the left of the layer name. Deselecting the checkbox will make the layer invisible.

You can make all layers visible by selecting the  button.

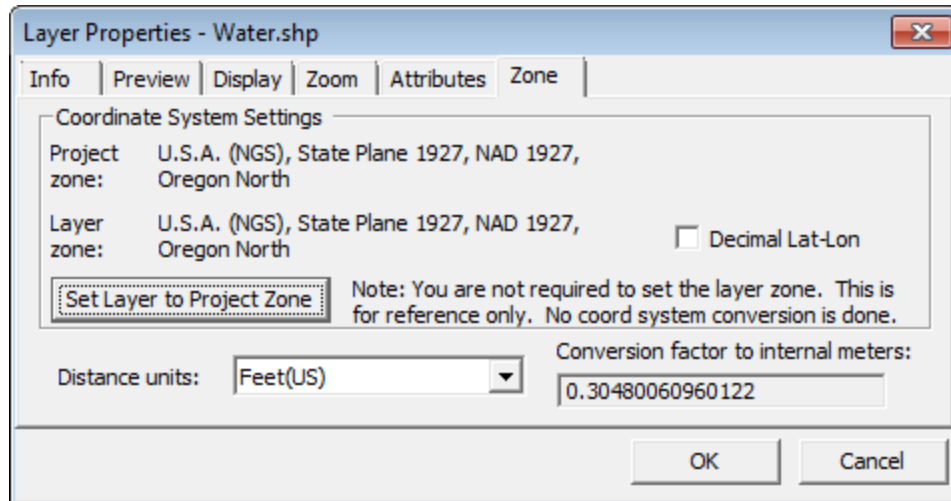
Layer Display Order

You can change the order in which the basemap layers will be displayed using the up and down arrow buttons. Highlight the layer whose order of display you wish to change, and then tap on the up or down arrow   buttons to move the layer up or down the list. Layers at the top of the list will be displayed on top of layers at the bottom of the list.


Adding a New Layer

Tap on the **Add New Layer**  button to display the **Basemap Layer File** screen. Here you can specify which .SHP, .MIF, .DXF, .DGN or .UDF file you wish to load and display as part of your basemap display. If the selected file has been used as a basemap layer before, it will be added to the list on the main screen of the **Basemap Layer Control** screen. You may repeat this process as necessary to select all of the desired basemap layers.

If the selected file has not been used before, you will need to verify the zone settings for the file. The **Layer Properties** screen will be displayed.



If you select a .SHP file where an .APM file of the same name also exists in the same folder, both files will be opened simultaneously.

You can invert the selection of layers to be displayed by tapping the  button.

Project Zone

This field lists the zone settings for the current project.

Layer Zone

This field lists the zone settings assigned to the basemap layer. This field will read “No Zone Set” the first time a layer is used. If the **Project Zone** and the **Layer Zone** fields do not match, a warning will be displayed.

Tap the **Set Layer to Project Zone** button to assign the current project zone to the basemap layer file. This zone information will be stored in the .BLI file.



Units

Verify the units for the basemap layer by selecting the proper units from the list.


Note: You are not required to set the layer zone. This setting is for reference only, and no coordinate system conversions are performed. However, it is important that the zone settings of the basemap layer and the project are the same in order for the basemap layer to be used effectively.

Load Basemap Layer

Each basemap layer must be loaded into SOLO Office - Forest Edition before it can be displayed. Layers selected for display will be loaded automatically when you exit the **Basemap Layer Control** screen.

If you wish to configure the individual properties of the basemap layers, you may want to load the layers individually. Highlight each layer individually and tap the **Load > Unload Layer to > from Memory**  button to load the layer into SOLO Office. Tap the  button again to unload the layer.

Layer Display Options

Once a basemap layer has been loaded, you may configure several display options for that layer. Highlight the desired layer and tap the **Layer Properties...** button  in the **Basemap Layer Control** screen to display the **Layer Properties** screen box. The settings available on each of the pages in the **Layer Properties** screen are discussed below.

Zoom to Layer

Tap this button to zoom the Map View to display the extents of the highlighted layer.

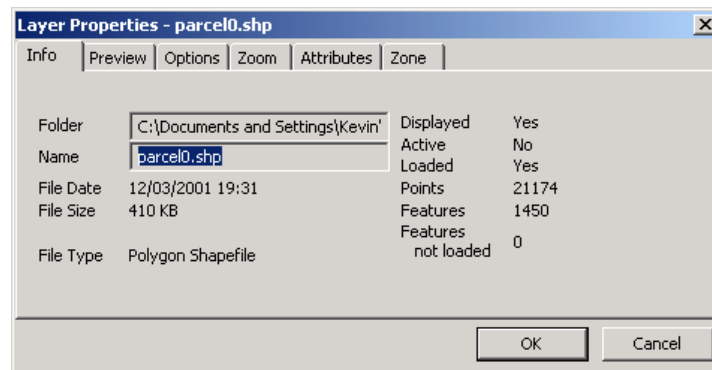
The Layer Properties Screen

The Layer Properties screen contains six pages of information and display options. Tapping on the label for each page will display that page.

Layer Properties: Info

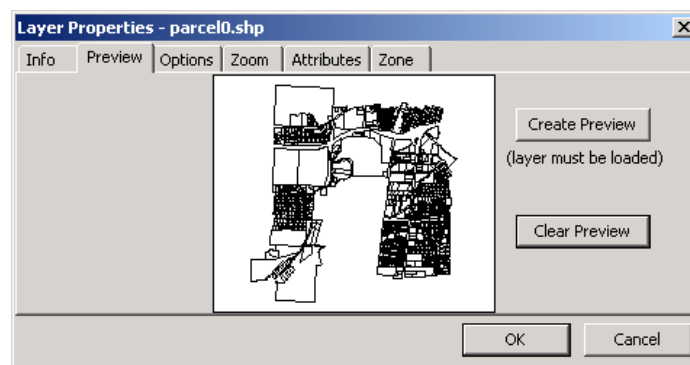
The **Info** page provides detailed information about the basemap layer, including the name, location, size, number of points and number of features.

Information in the **Info** page cannot be edited, and is for reference only.



Layer Properties: Preview

The **Preview** page provides a thumbnail preview of how the basemap layer will be displayed in the Map View.

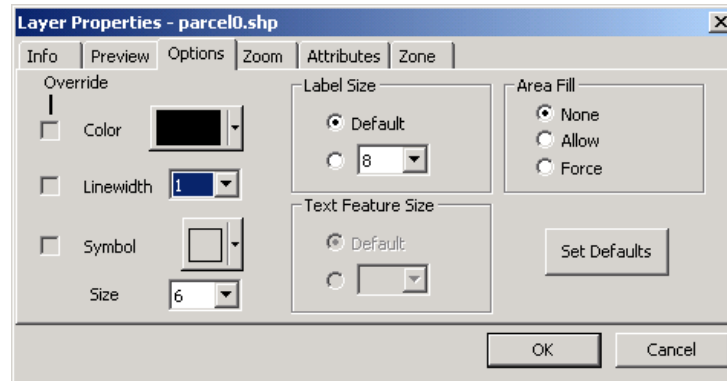


The preview will be displayed in black and white.

If no preview exists for the layer, you can create one by tapping on the **Create Preview** button. If you wish to delete the preview, you can tap on the **Clear Preview** button.

Layer Properties: Display

The **Display** page allows you to configure the display characteristics of the layer.



Color

Tap this button to display a color palette. The selected color will be used for all features on the layer if you have selected a .SHP, .DXF, .DGN or .UDF file.

For .MIF files, all features with an unspecified color will use the selected color. You may also override the specified colors in a MIF file by checking the **Override** box.

Linewidth

Select a linewidth for line and area features from the list. The selected linewidth will be used for all line and area features on the layer if you have selected an .SHP, .DXF, .DGN or .UDF file.

For MIF files, all features with an unspecified linewidth will use the selected linewidth. You may also override the specified linewidth in a MIF file by checking the **Override** box.

Symbol

Tap this button to display a symbol palette. The selected symbol will be used for all point features in the layer if you have selected an .SHP, .DXF, .DGN or .UDF file.

For MIF files, all features with an unspecified symbol will use the selected symbol. You may also override the specified symbol for point features in a MIF file by checking the **Override** box.

Label Size

SOLO Office - Forest Edition will use a font scaled to the current Map View to display basemap feature labels. You may select a specific label font size by tapping the lower radio button and selecting the desired size from the list.

Text Feature Size

For MIF Text features, SOLO Office - Forest Edition will use a font scaled to the current Map View to display the feature. You may select a specific feature font size by tapping the lower radio button and selecting the size from the pull-down list.

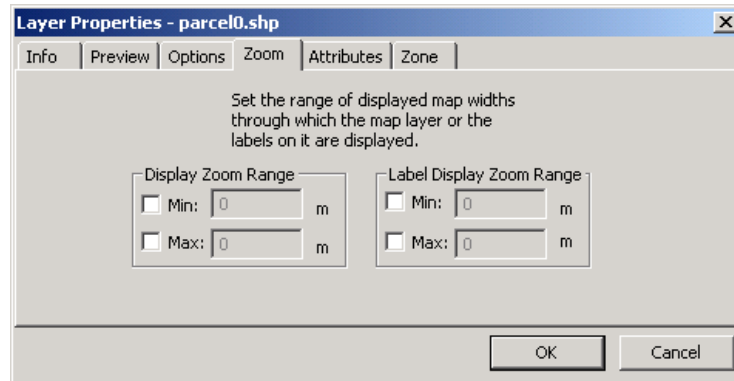
Area Fill

The default setting is none, where all area (polygon) features will be displayed with no fill. You may choose to allow fill if the area feature has a fill assigned, or you may choose to force the area feature to fill. The fill will be solid, in the color selected for the layer.

Tap the **Set Defaults** button to return all the settings in the Options page back to the default settings.

Layer Properties: Zoom

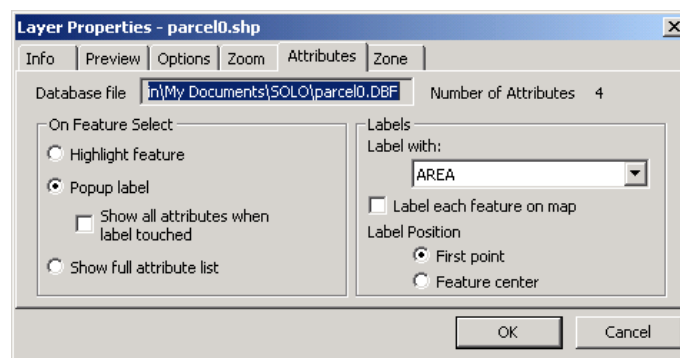
The **Zoom** page allows you to set zoom ranges for the display of basemap layers and labels.



Set a minimum zoom range, a maximum zoom range or both. If the viewable width of the Map View is larger than the minimum and > or smaller than the maximum, the layer and > or label will be displayed.

Layer Properties: Attributes

The **Attributes** page allows you to configure the display characteristics of the attributes associated with the layer.



On Feature Select

When you tap on a basemap feature in the active layer you will have three available display options: highlight the feature only, highlight the feature and pop up the feature label or highlight the feature and show the full attribute list for the feature.


If you select the **Popup Label** option, select the layer attribute that you wish to display as the popup label from the list provided in the **Label with** field. You may also choose to display the full attribute list by tapping the popup label.

Labels

When you check the box for the **Label each feature on map** field, each feature in the layer will be labeled in the Map View, within the restrictions established in the **Zoom** page. You may also specify the label position (whether pop up or continuous), at either the first point of the feature or in the center of the feature.

Tap the **OK** button to return to the **Basemap Layer Control** screen.

Basemap Option File

At this point you may also save the current basemap configuration for reuse. Tap on the **Save**  > **Load Config File** button in the **Basemap Layer Control** screen to display the **Basemap Option File** screen and then enter a name for the current configuration. Tap the **Save** button to save the configuration for later use.

The configuration can then be recalled for a future project by Tapping on the **Load** button in the **Basemap Option File** screen. You may also clear the selected basemap configuration file by Tapping on the **Clear** button.

Displaying a Raster Image

SOLO Office - Forest Edition provides the capability to display a raster image in the Map View in a TIF, JPG, JPEG 2000, DOQ or SIF file format.

To load and display a raster image, select **View > Basemap Options**. This will open the **Basemap Layer Control** screen.

Note: The **Basemap Layer Control** screen also allows you to load and display vector basemaps. This procedure is discussed in the previous section.

The **Basemap Layer Control** screen lets you select the layers of data that you wish to load and display, as well as controlling the properties of the basemap layers.

Selecting Images


Tap on the **Add a New Layer**  button to display the **Basemap Layer File** screen. Here you will specify which image file you wish to load and display as part of your basemap. The selected file will be added to the list in the main view of the **Basemap Layer Control** screen. You may repeat this process as necessary to select multiple image files.

Image Projections

SOLO Office - Forest Edition will assume that the projection and distance units used by the image will match the current settings for your project. It is important that your project settings match the image for proper usage. You have the option of changing your project settings to match those of a selected image in the **Image Selection** screen, described below.


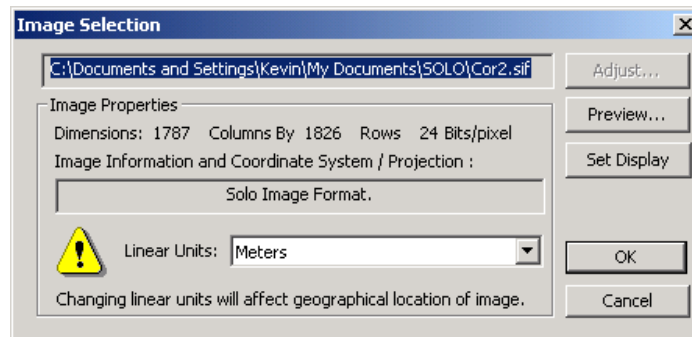
Once an image has been loaded, you may configure the display for that image and review the image properties. Highlight the desired layer and tap the **Layer Properties...**  button in the **Basemap Layer Control** screen to display the **Image Selection** screen. You may also access the **Image Selection** screen by double tapping on the desired image.

Image Selection Screen

The **Image Selection** screen displays the dimensions, the resolution and the projection information (if available) for the image.



You may adjust the contrast and brightness of a black and white image by tapping the **Adjust** button. The **Image Enhancements** screen will be displayed, which is described below.

Preview the display of the image by tapping the **Preview** button. The **Image Preview** screen will be displayed, which is described below.

You may also change the linear units of the image by selecting from the pull-down list in the **Linear Units** field. The default unit is Meters, and SOLO will assume that all images are referenced to meters unless this field is changed.

To set the projection settings of the current project to match those of the selected image, Tap on the **Set Display** button.

Tap the **OK** button to return to the **Basemap Layer Control** screen.

Image Preview Screen

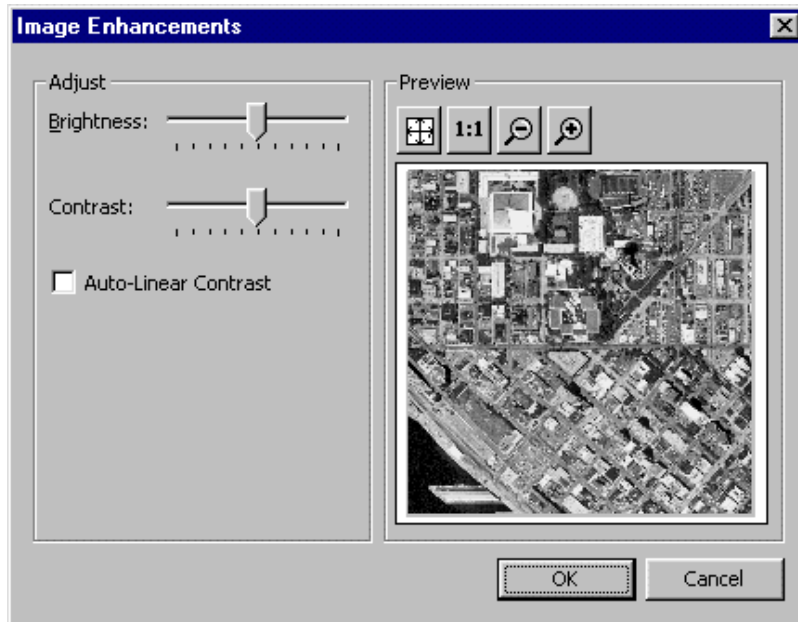
You may preview the image by tapping the **Preview...** button in the **Image Selection** screen.

Zoom controls allow you to zoom the display in and out.

The arrow keys allow you to pan the display in 4 directions, or you may pan the display by dragging the image with your stylus.

Image Enhancements Screen

You may adjust the contrast and brightness of the image by tapping the **Adjust...** button in the **Image Selection** screen.

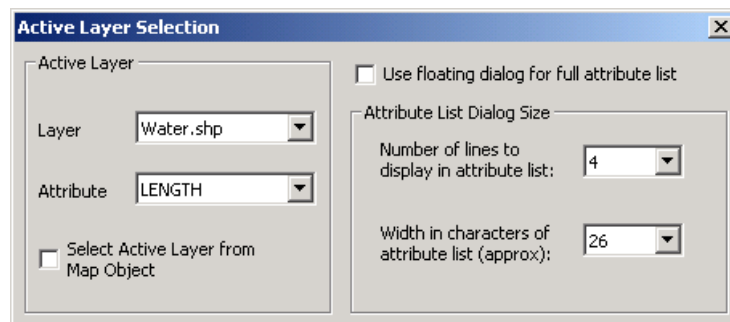




You may check the box labeled **Auto-Linear Contrast**. SOLO Office - Forest Edition will then calculate the optimal contrast for your image.

When you are satisfied with the display, tap the **OK** button to apply the adjustment.

View > Set Active Layer

Selecting this option will display the **Active Layer Selection** screen. From this screen you can select the active basemap layer, change the attribute used for the pop-up label and select to use a fixed table or floating screen to display the basemap feature database.



Only one basemap layer may serve as the 'Active' layer at any given time. The Active layer is indicated by 4 horizontal lines  in the **Active** column of the **Basemap Layer Control** screen. To change the Active layer, select the **View > Active Layer** menu option, or tap the  button in the Mode Toolbar.

Select the active layer from the provided list in the **Layer** field.

Select an attribute that will be used as the pop-up label for the feature in the **Attribute** field.

Checking the **Select Active Layer from Map Object** box will allow you to select the active layer when you tap on any map object in the Map View. This will let you jump from layer to layer without re-opening the screen.

You may also check the box labeled **Use floating screen for full attribute list**. When you tap on the pop-up label for the selected basemap feature, a floating screen will open that displays all of the attributes for the selected feature. If this box is not checked, a portion of the Map View will be dedicated to display the attribute information.

If you have chosen to use the floating screen, you may also configure the size of the floating screen by specifying the number of lines to display and the width of the lines in characters.

Tap the **OK** button to confirm your selections and return to the Map View.

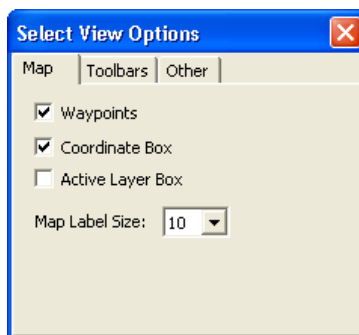
View > Show Legend

When a basemap is loaded, this option will toggle on/off the display of a legend across the top of the map view with details about the current layer.

View > Display Options

This function allows you to toggle on and off, and to customize, various display options within SOLO Office - Forest Edition. When you select **View > Display Options**, the **Select View Options** screen will be displayed. There are three pages available in the **Select View Options** screen. Each of the options is described below. When an option is on, a check mark is displayed next to it.

Map Page




Waypoints

Check this box if you wish to display the waypoints selected for the current project in the Map View. Generated Grids are stored as Waypoint files, so you will need to check this box in order to display grid points.

Coordinate Box

Check this box if you want the coordinates of a selected Feature, Waypoint, basemap feature or manually selected location to be displayed in the coordinate box in the upper left corner of the Map View. This box will also display the coordinates of the last logged feature.

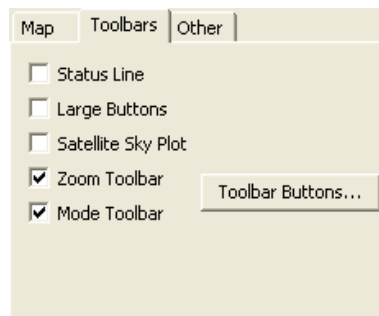
Active Layer Box

When checked, a small box will appear in the Map View showing the name of the active layer. (The active layer can be changed using the  button on the Mode Toolbar or by selecting **View > Set Active Layer...**)

Map Label Size

This will adjust the label size in the Map View from 8 to 24.

Toolbars Page



Status Line

Check this box if you wish to display the Status Line at the bottom of the Map View.

Large Buttons

Check this box if you wish to display large shortcut buttons for **Log**, **Log Another** and either **Log Laser Offset** or **Navigate**, in the Map View.

Satellite Sky Plot

Check this box if you wish to display the satellite sky plot in the Map View.

Zoom Toolbar

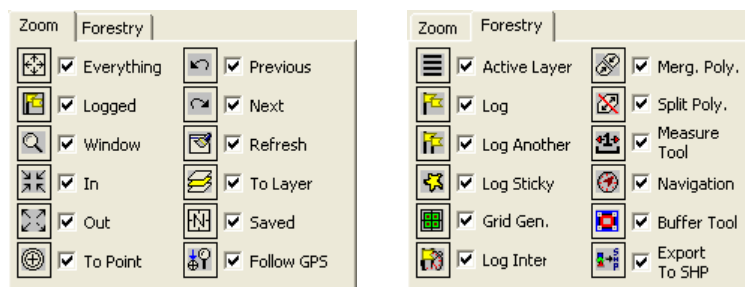
Check this box if you wish to display the Zoom Toolbar.

Mode Toolbar

Check this box if you wish to display the Mode Toolbar.

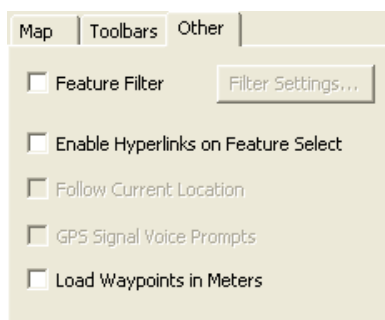
Toolbar Buttons

To personalize the buttons displayed in the Forestry and Zoom Toolbars, Tap the **Toolbar Buttons** button. The **Select Toolbar Buttons** screen will be displayed.



Check the boxes for the Toolbar Buttons that you wish to display in the Toolbars.

Other Page



Feature Filter

Check this box if you wish to filter the display of logged features. Filters may be applied based upon feature type, feature name or by the time that a feature was logged.

To customize the filter, check **Feature Filter** and Tap on the **Filter Settings** button. The **Display Controls** screen will be displayed.

There are four pages available in the **Display Controls** screen. The **Point**, **Line** and **Area** pages display the names of those feature types that are currently stored in your project.

Uncheck the box labeled **Show Point > Line > Area Features** to disable the display of all features of that type.

Uncheck the box next to a particular feature name to disable the display of that feature.

Tap the **All Visible** button to check the box next to every feature listed.

Tap the **Invert** button to invert the selection of checked and unchecked boxes.

In the **Time** page you can specify a beginning and ending time, outside of which logged features will not be displayed. To display only those features logged within a specific time range, check the box labeled "Show only features logged within range" and specify the **From** and **To** times.

You can edit the individual components of the date and time displayed in these fields by tapping on them.

Tapping on the **Set to Earliest** button will set the **From** time to that of the earliest logged feature. Tapping on the **Set to Latest** button will set the **To** time to that of the last logged feature. Tapping on the pull-down button for either field will display a calendar from which you can select a date.

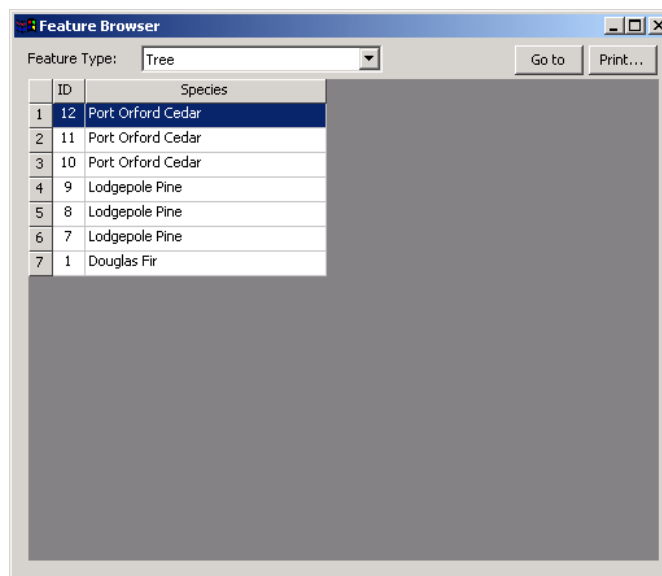
Tap **OK** to apply the selected filters.

Enable Hyperlinks on Feature Select

Check this box to turn on access to hyper-linked objects when selecting a logged feature in the Map View. When this box is checked, the object that was linked to the feature during data collection will be activated (image displayed, video clip played, etc.) when the feature is selected.

View > Feature Attributes...

This option allows you to view all logged features and their attribute information. When you select **View > Feature Attributes**, the **Feature Browser** dialog box will be displayed.



Select the feature type to be displayed from the drop down menu. All of the logged feature types in the current project will be listed.

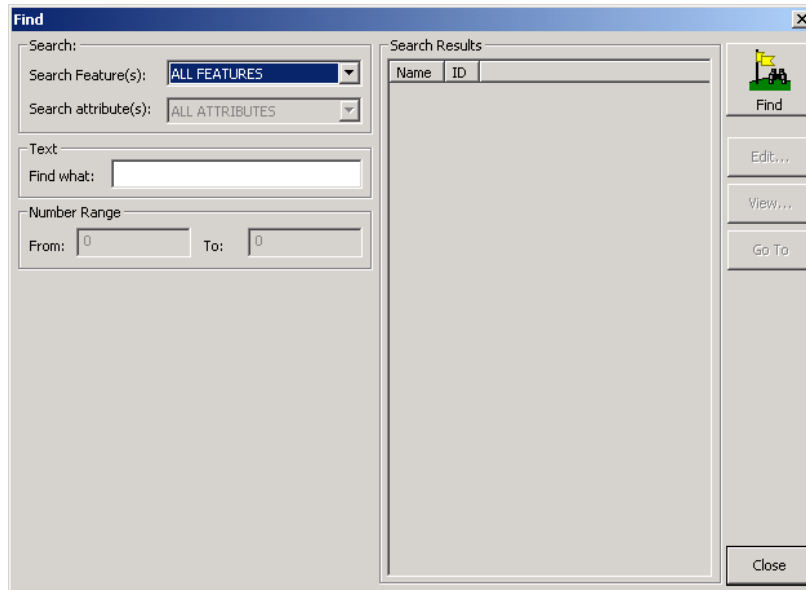
To view a logged feature in the Map View, select the feature and click the **Go To** button.

To print the list of features displayed in the list view, click the **Print** button.

View > Find Feature

The **View > Find Feature** menu option lets you to search for features with specific attributes. You can to search both logged data and basemap features.

Selecting **View > Find Feature** will display the **Find** dialog box.



Search Features

Select the feature that you would like to search for from a list of all the logged features and basemap layers. The default selection is ALL FEATURES.

Search Attributes

Select a specific attribute of the feature selected above. The default is ALL ATTRIBUTES. If ALL FEATURES is selected for the **Search Features** field, the **Search Attributes** field is not active.

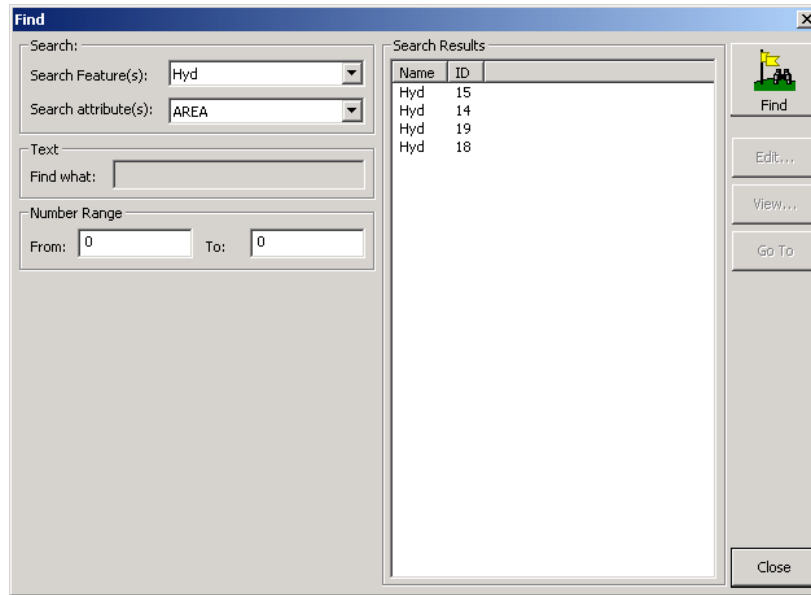
Find What

For ALL ATTRIBUTES or for text or menu attributes, you can enter a text string into this field that will be used in the search.

Number Range

For numeric attributes, enter a search range into the **From** and **To** fields.

Click on the **Find** button to initiate the search. The search results will be displayed in the **Search Results** list box.



For logged features that match the search criteria, the Feature Name will be listed in the **Name** field and the Feature ID will be listed in the **ID** field. For basemap features, the basemap file name will be listed in the **Name** field and the feature ID will be listed in the **ID** field.

Edit

To edit a logged feature, highlight the feature in the Search Results list and click on the **Edit** button. The **Logged Data Info** dialog box will be displayed where you can edit the attributes or location of the feature. This function is not available for basemap features.

View

Clicking on the **View** button will display a Map View of the highlighted feature with all of the attributes displayed in a spreadsheet format. This function is available for both logged features and basemap features.

Go To

Clicking the **Go To** button will return you to the Map View with the selected feature centered and highlighted. This function is available for both logged features and basemap features.

The Log Menu

SOLO Office will allow you to log Point, Line or Area features, and to provide attribute data for these features. Features logged in SOLO Office will be tied to a location, or point. There are two ways in which points may be logged using SOLO Office: manually through the touch screen or by selecting a known location as defined by a previously logged point or a basemap feature.

In addition, you may also change the location of a previously logged point through the Log menu.

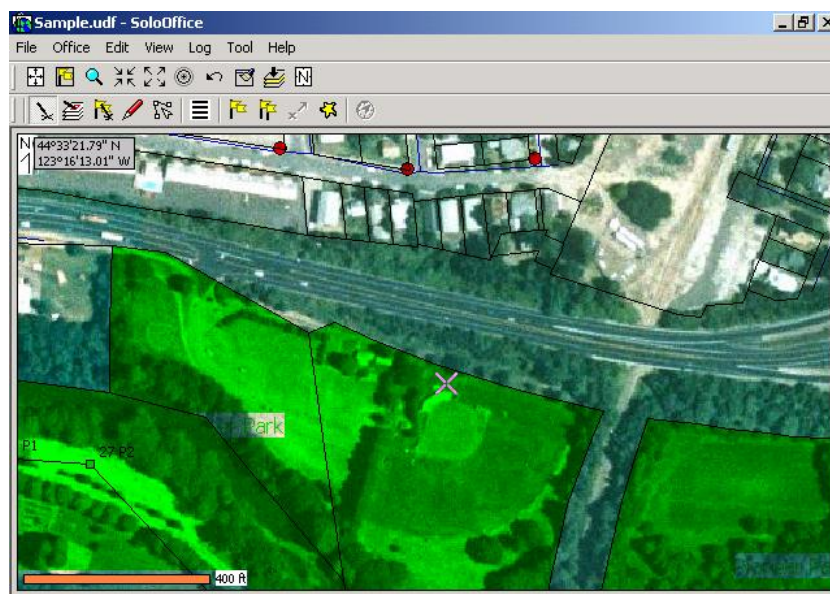
Log > Log a Point

When you select Log > Log a Point, or click on the **Log a Point** button in the Map View or the Forestry Toolbar, you will be using the manual log method. The procedure for logging a point at a known location is described below under **Log > Log at**.

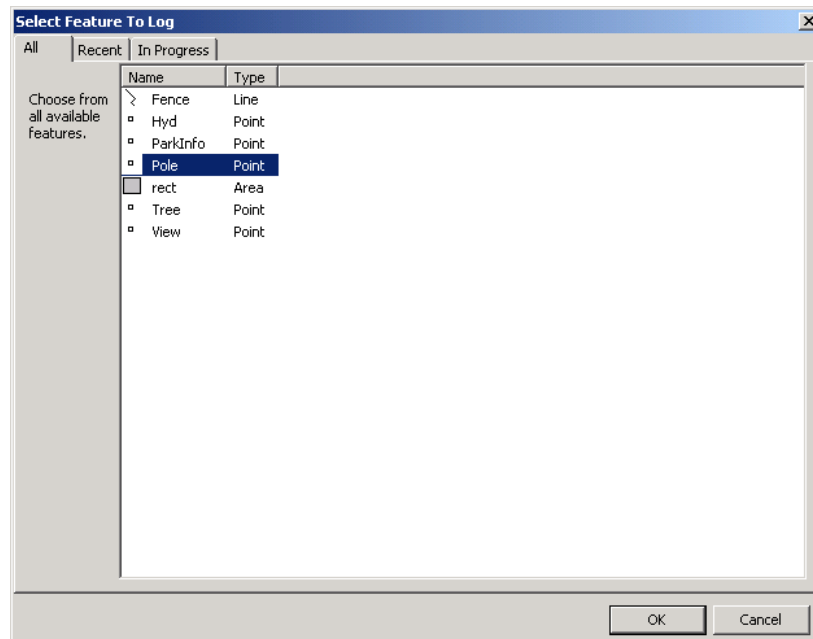
Logging Points Manually through the Touch Screen

SOLO Office will allow you to use your mouse pointer to designate the location of new points. This function calculates the coordinate location of the point at which you click your mouse based upon the current scale of the Map View and the location of existing data. Therefore, it is recommended that your current project contains some previously logged data, or that a basemap or image is being displayed, before using this function.

1. Make sure that you are in Manual mode by clicking on the **Stylus - Manual Position** button in the Mode Toolbar, or by selecting Edit > Stylus Use > Manual.
2. Click once on the location in the Map View where you would like to place the new feature. A large X will be placed at the location. SOLO Office will calculate the coordinates of the location and display them for you in the upper left corner of the Map View if the Coordinate Box is toggled for display (**View > Display Options**).



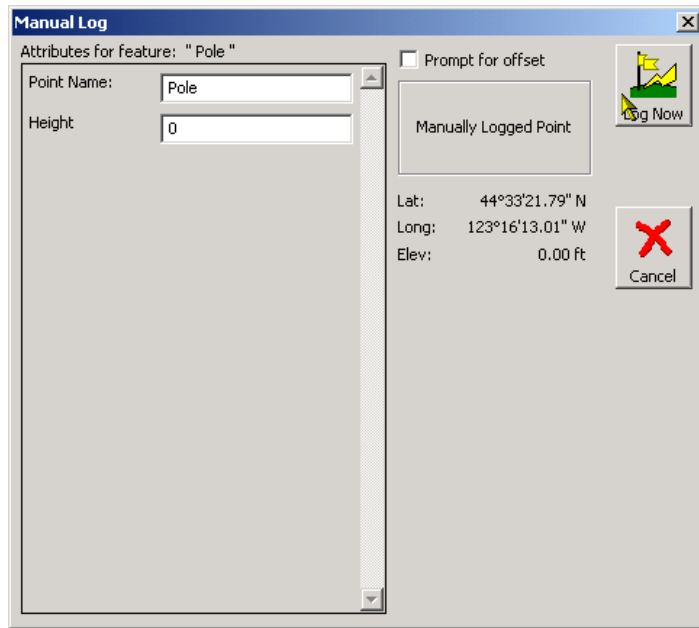
3. Each time that you click once on the Map View, coordinates will be calculated for the location of the new point.
4. Once you are satisfied with the location, click the **Log a Point** button or click **Log > Log a Point**.
5. You will be prompted to select a feature to log from the current Feature File. The **Select Feature To Log** dialog box will be displayed.



6. The **Select Feature To Log** dialog box displays the available features in three different pages.
 - **All Page**
This page lists all the available features from the Feature File, or in this case, from the built-in features when no Feature File is selected.
 - **Recent Page**
This page allows you to select from the features that were recently used, where the most recently used feature is at the top of the list. Finding features from this page can be easier than from the **All** page when you have many features available to choose from. Further, the attributes from the last logged feature of the same name will be carried over to the new feature if you select from the **Recent** page.
 - **In Progress Page**
You should select features from this page when adding points to existing Line or Area features that are still in progress. When selecting features from this page, the original point name for that feature will be offered as the default name.

Note: The In Progress data logging functionality allows you to log multiple Line or Area features simultaneously.

7. Double-click on the desired feature from the desired page to select it. The **Manual Log** dialog box will be displayed.



8. Enter the attributes for the feature. Depending on the system setup, feature attributes are entered in the left side of this dialog box. If there are more attributes than can be displayed at one time, you may use the scroll bars to scroll through the entire list.
9. The **Manual Log** dialog box also displays the coordinates of the selected location in the format that was chosen in the **Settings** dialog box.

Once you have entered the attributes for the feature, click on the **Log Now** button to record the feature and return to the Map View.

Log > Log Another

Once a point has been logged, the **Log Another** button will become active in the Mode Toolbar and the **Log Another** option will become active in the **Log** menu.

This option is useful when you are logging multiple points that have the same characteristics because it skips the feature selection process and goes directly to the **Log** dialog box. You can also use this option to add more points to a line or area feature, skipping the **Select Feature to Log** dialog box.

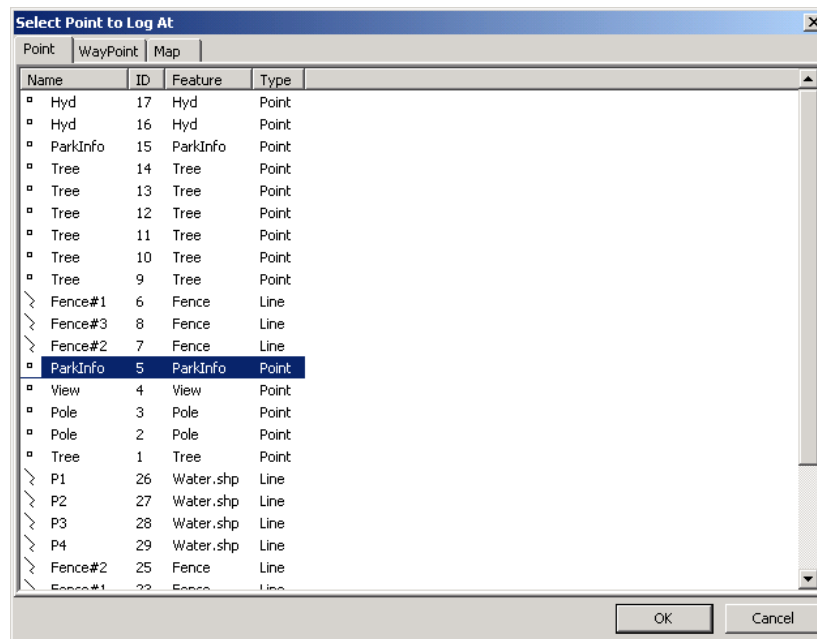
Log > Log At

For many applications it can be useful to record new Features at a known location. For example, when logging street signs, there may be several signs on the same pole. Instead of logging a unique position for each sign, SOLO Office will let you log a single position and then use that position to mark the location of several features.

There are three ways that SOLO Office will let you record a new feature at a known location. All three methods are accessed through the **Log > Log At ...** menu option. When you select this menu option, the **Select Point to Log At** dialog box will be displayed.

Log at... > Point

The **Log at... > Point** option allows you to select a previously logged position from a list. The most recently logged feature will be displayed at the top of the list.



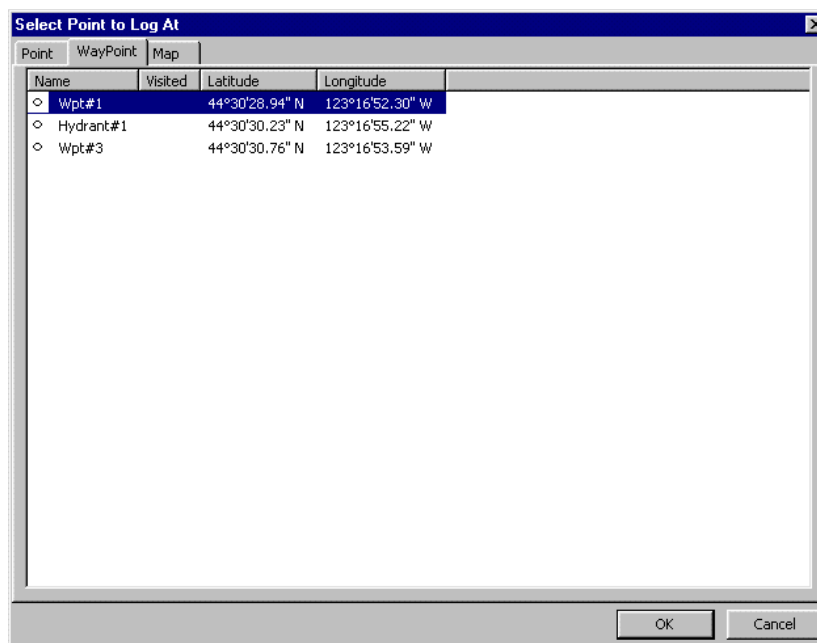
You may sort the listed points by Name, ID, Feature or Type by clicking on the field labels.

Double-click the desired point, or highlight it and click on the **OK** button. The **Select Feature to Log** dialog box will then be displayed.

Log at... > Waypoint

The **Log at... > Waypoint** function allows you to select a waypoint from a list. The Waypoints are listed in the order in which the waypoint file was created.

You may sort the listed waypoints by Name clicking on the Name label.



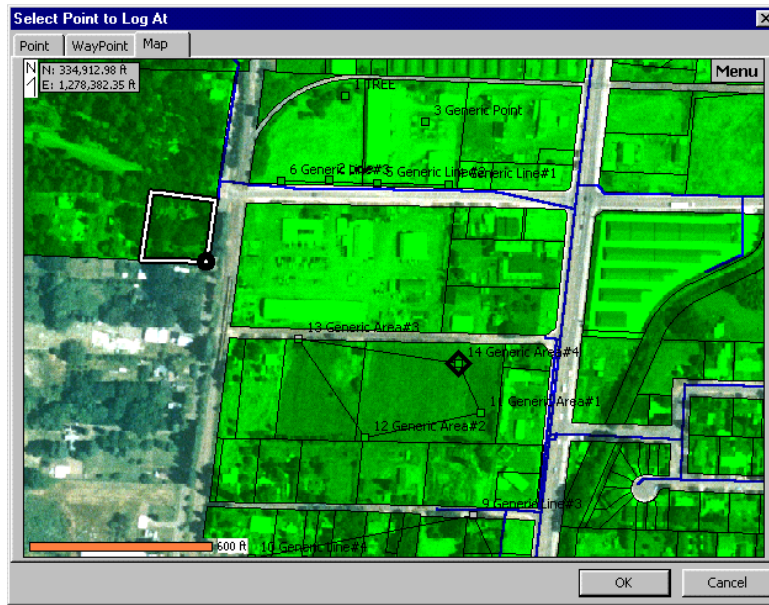
Double-click the desired waypoint, or highlight it and click on the **OK** button, to select the point. The **Select Feature to Log** dialog box will then be displayed.

Log at... > Map

The **Log at... > Map** function allows you to select a location from the Map View at which to log a new feature. Depending upon the selection for Stylus Use (**Edit > Stylus Use**), you may select a basemap feature or a logged data point.

When Pointer Use is set to **Basemap Feature**, you can select a feature from the active basemap layer. If the feature is a line or area, SOLO Office will select the point on the line or area closest to the point that you clicked.

When Pointer Use is set to **Logged Data**, you will be able to select a logged data point or waypoint by clicking on it in the Map View.



You may access several zoom and Display Options by clicking on the **Menu** button in the Map View.

Once you have selected the desired location, click on the **OK** button. The **Select Feature to Log** dialog box will then be displayed.

Log > Log a Waypoint

This menu option opens the Log a Waypoint screen where you can log a new point and append it to the current waypoint file. This menu option is only available if there is a waypoint file selected in the **File > Settings > Files** screen and if there is a valid position selected (GPS, Manual, Basemap Feature, Logged Data).

Enter the desired **Name** and **Comment** in the corresponding fields. The current position is displayed and can be modified if necessary. The **Last Waypoint** field displays the name of the last waypoint stored in the active waypoint file. Tap **Log Now** to append the new waypoint to the waypoint file.

Log > Sticky Log

For many applications, it may be useful to log the same feature continuously. For example, when mapping the boundary of a drainage field, it would save time if you did not have to specify that each point being logged be to be added to the drainage field. **Log > Sticky Log** allows you to bypass the **Log a Point** step.

1. Make sure that you are in manual, logged data or basemap stylus mode.
2. Select **Log > Sticky Log** or tap on the **Sticky Log** button in the Forestry Toolbar and then tap on the desired location in the Map View (In manual mode, any location can be selected. In basemap mode, a basemap feature in the active layer must be selected. In

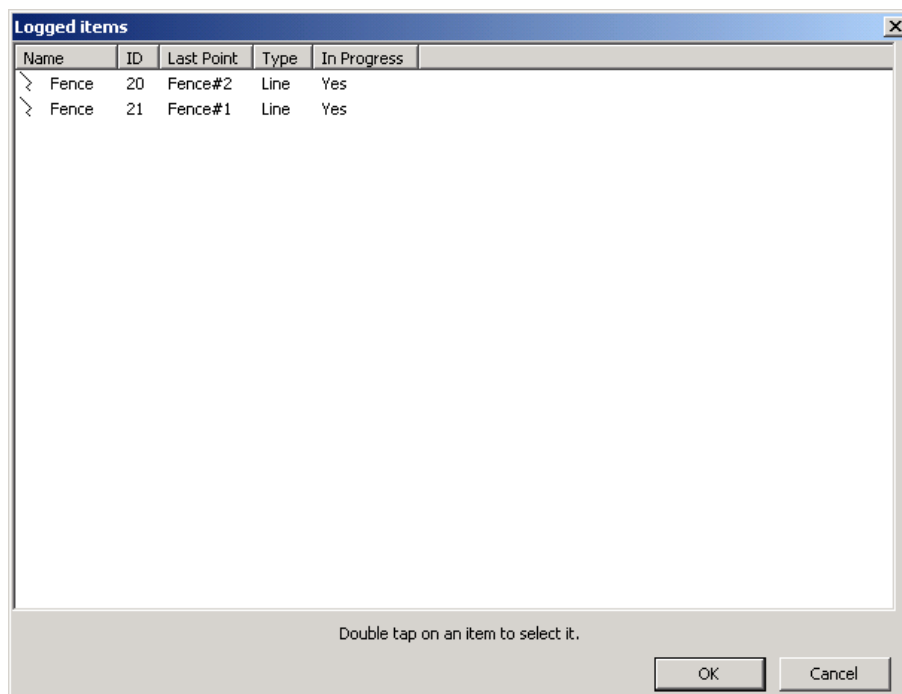
logged data mode, a logged feature, waypoint or CAD object must be selected). The **Select Feature to log** dialog box will be displayed.

3. Select the feature you wish to log and then enter the attribute data. Tap on the **OK** button to log the point and return to the Map View.
4. Now tap on the Map View again to log a new point for the same feature (In manual mode, any location can be selected. In basemap mode, a basemap feature in the active layer must be selected. In logged data mode, a logged feature, waypoint or CAD object must be selected). Each time you tap on the Map View, another point will be logged for the same feature.

Sticky Log will continue to log points on the Map View until you deselect it by Tapping on **Log > Sticky Log** or Tapping on the button a second time.

Log > End Feature

Line or Area features must be ended after the final point is stored to ensure that no additional points are added. To end a Line or Area feature, select **Log > End Feature**. The **Logged items** dialog box will be displayed.



If you had several features in progress to choose from, you could organize the list by feature name, last point name or feature type by clicking on the appropriate heading.

Double-click on the feature that you wish to end, or highlight it and click the **OK** button. After you double-click the feature, a dialog box will be displayed showing the total line length for a Line feature, or the perimeter and area for an Area feature.

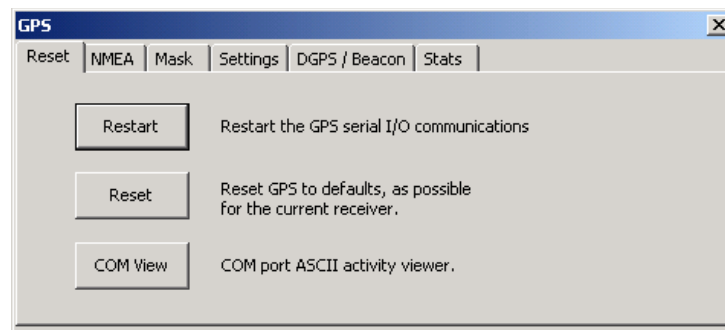
The Tool Menu

The Tool menu provides creating and editing Feature Files, measurement tools and a grid generation function.

Tool > GPS Configure

The GPS Configure routine can be used to make changes to the current configuration of your GPS receiver and to check the communication status between your computer and your receiver.

When you select **Tool > GPS Configure**, the **GPS** dialog box will be displayed. Up to 7 different pages can be displayed within the dialog box, depending upon the receiver brand selected in the **Receiver** page of the **Settings** dialog box.



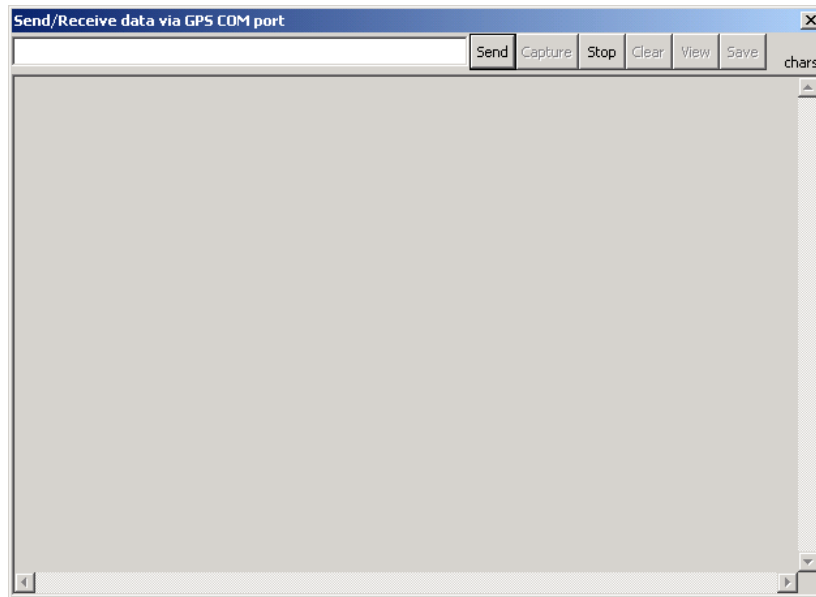
Reset

This page provides restart and reset functions, and is available for all receivers.

Tap the **Restart** button to restart communications with the GPS receiver. This function will force SOLO Office to scan the COM port selected in the **Receiver** page of the **Settings** dialog box for the presence of a GPS receiver.

Tap the **Reset** button to return the GPS receiver to the default power-on settings. This function is only active if you have selected CSI, Sokkia, Starlink and Other in the **Receiver** page of the **Settings** dialog box.

Tap the **COM View** button to display the **Send/Receive Data** dialog box.



You can send a data string to your GPS receiver by entering the string into the blank field at the top of the dialog box and clicking the **Send** button.

Capture any incoming ASCII data by clicking on the **Capture** button.

Click the **View** button to see the captured data.

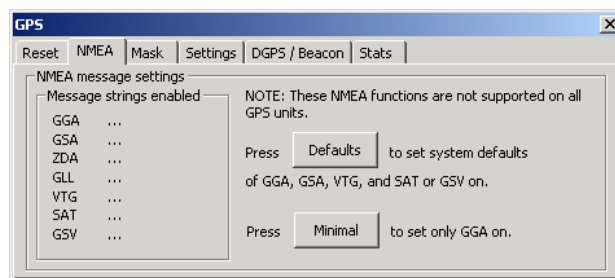
Stop the capture of data and view the results of the capture by clicking on the **Stop** button.

Clear the displayed information by clicking on the **Clear** button.

Save the captured data as a .LOG file for future playback in Emulation mode by clicking on the **Save** button.

Click on the **X** button to close the **Send/Receive Data** dialog box and return to the **Reset** page.

NMEA



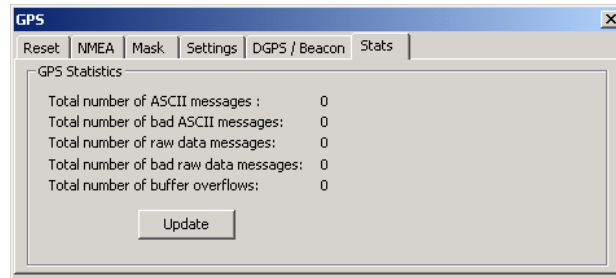
This page displays the current status of the various NMEA strings in the column on the left side of this page. Three dots indicate that the status of the string is not known.

Click the **Defaults** button to set the GGA, GSA, and VTG and SAT or GSV strings on. These are the default NMEA strings used by SOLO. Changing NMEA output options of your GNSS device can only be done on certain brands.

Click the **Minimal** button to set only the GGA string on. This is useful if you will be logging data very quickly (1 point/second).

Note: Clicking the **Minimal** button will disable the Satellite Sky Plot.

Stats



This page displays the current statistics for the number of NMEA and Raw Data messages that have been received and rejected, as well as if any buffer overflows have occurred.

This information can be used to confirm that you are receiving messages from the GPS receiver.

Click the update button to update the page with information that has been collected since the page was opened.

Tap the **OK** button to close the dialog box and return to the Map View.

Tool > Offset/Traverse Options

This function lets you specify the method you wish to use for collecting position data with your laser rangefinder.

There are two pages you can configure depending on how the laser rangefinder will be used. If you will be using the laser rangefinder to support your GPS receiver, select the **GPS Offset Mode** page. If you will be using the laser rangefinder as a stand-alone data source, select the **Traverse Mode** page.

Since the options available in each section of the pages will vary depending on the selections made in the previous sections, you should make your selections in the same order that they appear on the screen; **Use** (if available), **Method**, and **Reference**.

GPS Offset Mode

Height of Instrument

Enter the height above the ground at which the laser rangefinder will be used. The unit designation for this field depends upon the selections in the **Settings** screen.

Use

Select **Allow Offsets** if you would like to use the offset functions. This selection will activate the **Laser Offset** button in the Map View.

Select **No Offsets** if you do not wish to use the offset functions. This selection will deactivate the **Laser Offset** button in the Map View.

Method

Select the method that you would like to use for calculating the position of the new point. Select **Range Triangulation** to input the distance between two GPS positions and the new point.

Select **Azimuth** to input the azimuth and distance between a GPS position and the new point. There are three options available if you select Azimuth.

Auto – Both the distance and the azimuth will be provided by the laser rangefinder. This option requires the use of a compass connected to the laser.

Manual – The distance is provided by the laser rangefinder and the azimuth is entered through the keyboard.

Walk to – The distance is provided by the laser rangefinder and the azimuth is determined by occupying a second GPS position along the line formed by the first GPS position and the new point.

Reference

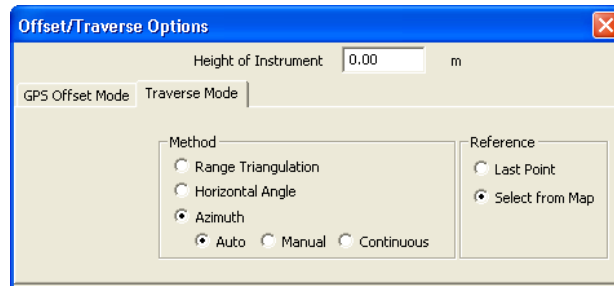
Select the method that you would like to use for choosing the known point(s) that will be used in the calculation of the new point. Select **From GPS** to use the current GPS location for the known point(s).

Select **Last Point** to use the last logged point instead of the GPS position. This option is only available if you have selected Azimuth for the Method.

Traverse Mode

Height of Instrument

Enter the height above the ground at which the laser rangefinder will be used. The unit designation for this field depends upon the selections in the **Settings** screen.



Method

Select the method that you would like to use for calculating the position of the new point. Select **Range Triangulation** if you want to input the distance between two known points and the new point.

Select **Horizontal Angle** if you will be using a laser rangefinder equipped with an angle encoder.

Select **Azimuth** to input the azimuth and distance between a known point and the new point. There are two additional options if you select Azimuth.

Auto – Both the distance and azimuth will be provided by the laser rangefinder. This option requires the use of a compass connected to the laser.

Manual – The distance is provided by the laser rangefinder and the azimuth is entered through the keyboard.


Reference

Select the method that you would like to use for choosing the known point(s) that will be used in the calculation of the new point. Select **Last Point** to use the last logged point as a reference. This option is only available if you have selected Horizontal Angle or Azimuth for the Method.

Select **Select from Map** to select a reference point from an existing map feature or to manually enter a coordinate location.

Tap the **OK** button to save any changes and return to the Map View.

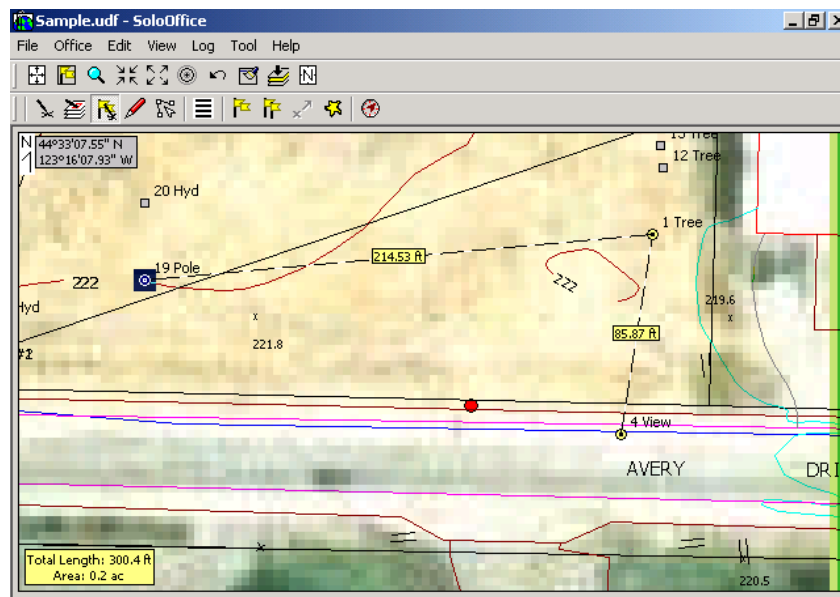
Tool > Measure Tool

The Measure tool works interactively with the Map View to measure distances, angles, perimeters and areas. Select **Tool > Measure Tool > Enable**, or tap on the  button in the Mode Toolbar to activate the Measure tool. Once the Measure tool has been activated, you will be returned to the Map View.

Note: The Measure tool can only be used when Stylus Use is set to Manual or Logged Data.

Measuring Distance

The Measure tool allows you to initiate a measurement by tapping on any location in the Map View. The location will be marked on the Map View by a yellow circle. You may then tap on another location to define a line segment. SOLO Forest will calculate and display the distance between the two locations.



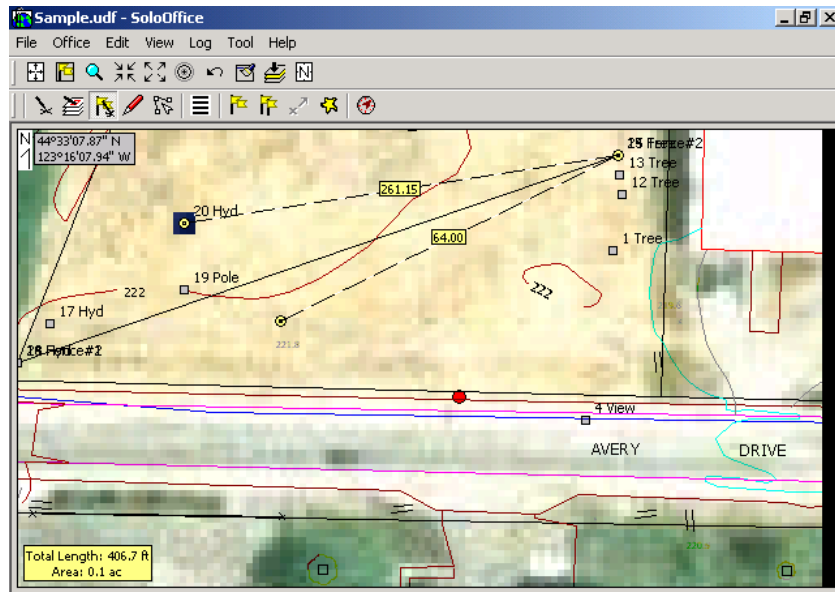
You may continue to tap on additional locations in the Map View, to define additional line segments. Each time a new location is selected, SOLO Forest will calculate and display the distance between the new location and the last location.

Note: If you select a logged feature when using the Measure tool, the coordinates for the feature will be used for the calculations.

In addition to the distance, SOLO Forest will also display the cumulative distance between all of the locations in a box in the lower left corner of the Map View. Once three locations have been selected, the area will also be displayed here.


Measuring Angles

To change from distance measurement to angle measurement, select **Tool > Measure Tool > Bearings**.



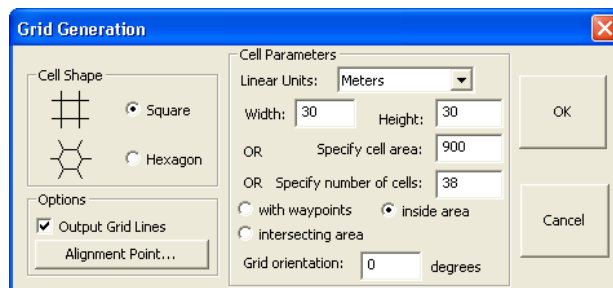
Instead of displaying the distance, SOLO Forest will now display the bearing between the two locations. The Total Length and Area will still be displayed in the lower left corner of the Map View.

Clearing Measurements

You may clear all of the existing measurements by either Tapping on the same location twice, or by selecting **Tool > Measure Tool > Clear and Start Over**. Turn the Measure tool off by selecting **Tool > Measure Tool > Enable**, or tapping on the  button again.

Tool > Generate Grid

SOLO Office will let you generate a grid over a selected Area feature, storing the grid points to a waypoint file for later use in the field. To generate a grid, first select the desired area feature by clicking on it in the Map View. The area feature can be either logged data or a basemap feature. Once the area feature has been selected, select **Tool > Generate Grid** to display the **Grid Generation** dialog box.



Cell Shape

Choose between a square and hexagonal grid shape.

Cell Parameters

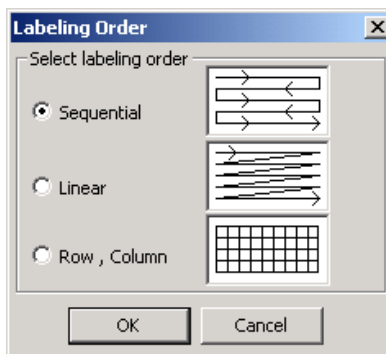
You can define the number of cells that should fit within the active area feature, or the size of the cells by providing the cell width and height, or the cell area, or the number of cells. These fields are linked together so changes in one will automatically compute the changes to the others.

The units for the cell size and area are selected in the **Linear Units** field.

You may also specify an orientation angle for the grid. The default is an orientation of 0, or North.

Options

You may choose to display the grid lines for the generated grid by checking the **Output Grid Lines** checkbox. Otherwise, only the grid points will be shown.



Click the **Generate** button to generate the grid. The **Labeling Order** dialog box will be displayed if you have chosen the rectangular grid option. Select between sequential, linear and row/column order and click **OK**.

A standard Windows **Save As** dialog box will prompt you to enter the file name for the waypoint file containing the grid. Click the **Save** button to save the file and return to the Map View.

Note: You must have the SOLO Office set to display waypoints in order to see the new grid points. Select **View > Display Options** to display the **Select Display Options** dialog box and check the box for Waypoints.

Note: Generating a dense grid over a large area could take a long time, and could use a substantial amount of memory. SOLO Office will display an informational dialog box if the number of grid points to be generated is greater than 400 points.

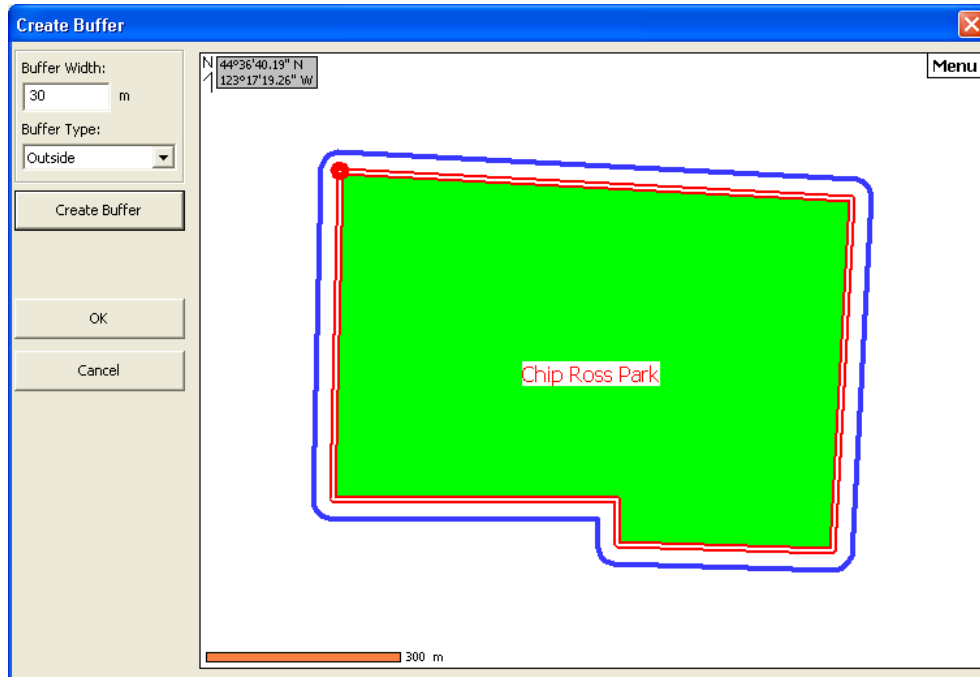
You can remove a grid by clearing the Waypoint file field in the **Files** page of the **Settings** dialog box.

Tool > Buffer Feature

This menu option allows you to create a buffer around any existing feature. The options available when creating a buffer depend on the type of feature that a buffer is being created for, although the width of the buffer must be defined for any feature type. Once a buffer is created, it is stored as a UDF feature.

When a buffer is created for a line feature, you are provided with the option to create a buffer on either side of the line feature or both sides. For area features, a buffer can be created inside and/or outside the perimeter of the feature. When a point is selected, you are not asked to define a buffer type.

1. Select the feature that you want to create a buffer for and then tap **Tool > Buffer Feature**.



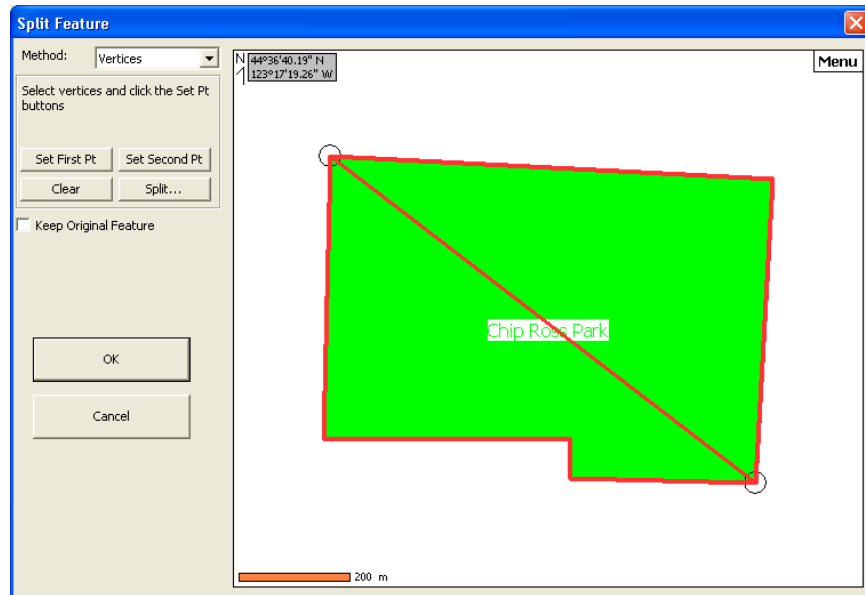
2. Enter the desired **Buffer Width** to define how far the buffer extends from the border of the feature.
3. Select the **Buffer Type** from the dropdown list to define if the buffer is to extend inside and/or outside of an area feature, or to the left, right, or both sides of a line feature.
4. Tap **Create Buffer** to draw the buffer in the Map View. Any changes can be made to the buffer settings and redrawn by tapping **Create Buffer** again. The buffer is not actually saved until you exit the screen by tapping **OK**.

Tool > Polygons > Split

This menu option allows you to split an existing area feature into two separate features. The separation can be defined using an existing line feature, the vertices of two nodes on the original feature, or by drawing a freehand line through the feature with a stylus (Redline). The two new features that result from a split will retain the attributes of the original parent polygon and you have the choice of keeping or removing the original feature after it is split.

The split function can be performed on UDF and SHP area features only. Basemap UDF splitting is not supported.

1. Select the area feature that you want to split and then select **Tool > Polygons Split**.

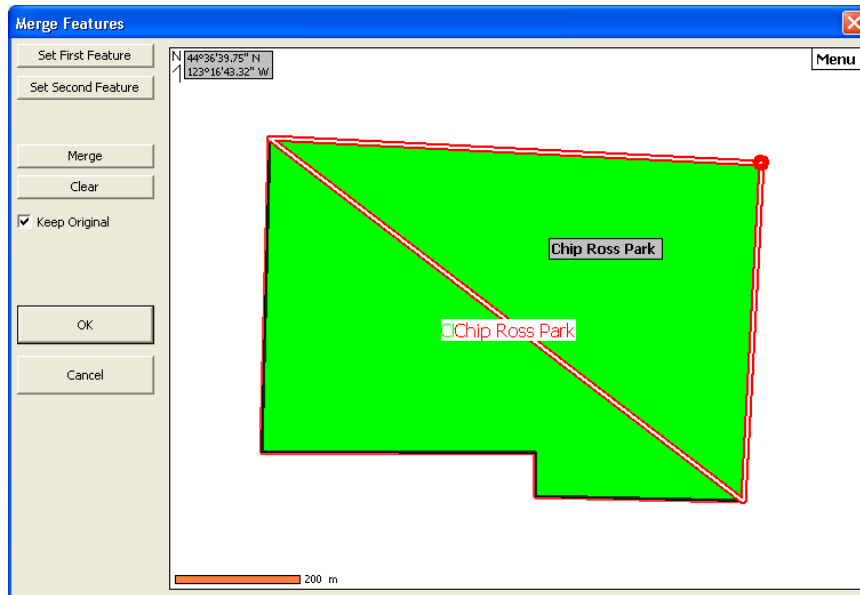


2. Select how you want to split the feature from the **Split Method** dropdown list. Each method is described below.
 - a. **Feature:** This option allows you to select an existing line feature that bisects the active area feature to define where to split the active area feature.
 - b. **Redline:** When this option is selected, you can draw a line through the active area feature using a stylus to define where the split is to occur.
 - c. **Vertices:** This option allows you to define the split between two existing nodes on the active area feature. Tap the first node and then tap **Set First Pt**. Tap the second node and then tap **Set Second Pt**. A line will then automatically be drawn between the two nodes.
3. If **Keep Original** is left unchecked, the original area feature will be deleted after the two new features are created. If checked, the original feature will not be deleted.
4. When the bisecting line is defined, tap **Split** to split the active area feature into two new area features.

If any mistake is made during the Split routine, tapping **Clear**, or selecting a different split method, will reset the changes.

Tool > Polygons > Merge

This menu option allows you to merge two existing area features into a single feature as long as the two selected area features touch or overlap.



The merge function can be performed on UDF and SHP area features only. Basemap UDF merging is not supported.

1. Tap an area feature that you want to merge with another area feature and then tap **Set First Feature**.
2. Tap another area feature that you want to merge with the previously selected area feature and then tap **Set Second Feature**.
3. If you want to keep the original features, check the **Keep Original Features** checkbox. Leaving this unchecked will delete the two original features when they are combined into a new single feature.
4. Tap **Merge** to merge the two selected features into a single feature.

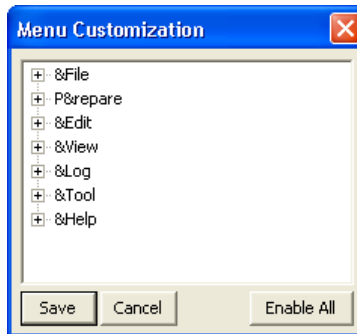
If any mistake is made during the Merge routine, tapping **Clear** will reset the changes.


Tool > Run SoloBasic Script

This menu option allows you to run a SoloBasic script. SoloBasic is an interpretative scripting language that allows people to completely customize SOLO with no additional tools or compilers. Contact your local Trimble representative for more information on SOLOBasic.



Tool > Customize

The **Tool > Customize** menu option allows you to toggle on and off the display of all the available pull-down menu options in SOLO Office. When you select this menu option, the **Menu Customization** dialog box will be displayed.

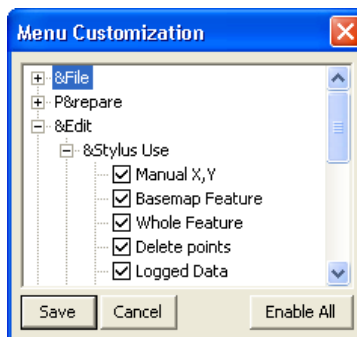


Each of the seven pull-down menus is listed in a familiar Windows format. Click on the  symbol next to each menu name to expand the menu and display the available options.

Each item in the menu has a checkbox indicating whether the item will be displayed in SOLO Office when the menu is selected. You may change the status of the checkbox by double clicking on the item.

Menu items that have additional options, such as View Stylus Use, will be displayed with another  symbol. These menus may also be expanded by clicking on the  symbol.

You may click on the **Enable All** button to make sure that all of the menu items will be displayed.



Click on the **Save** button to save any changes and return to the Map View.

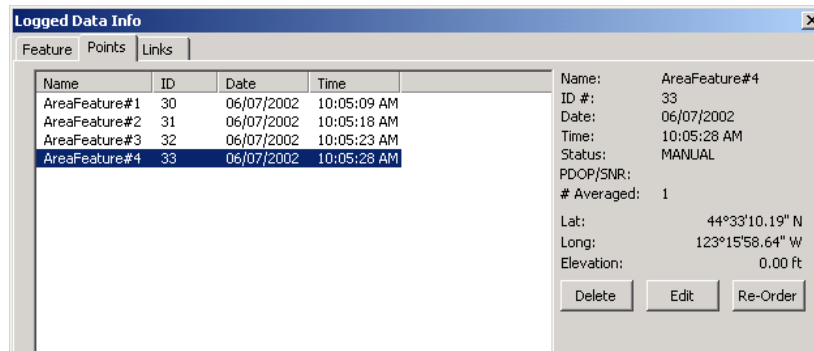
Editing Collected Data

This section of the manual will discuss the different ways in which you may edit data that is stored in your project file. SOLO Office allows you to edit both the point location and the attribute information for a feature.

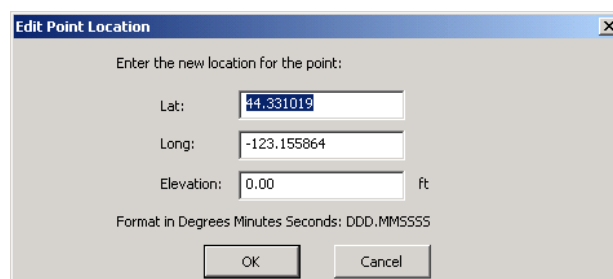
Typing in new Coordinates

You can change a point's location by typing in new coordinates by following the procedure below.

1. Make sure that the Pointer Use is set to logged data by selecting **View > Pointer Use > Logged Data** or by clicking on the **Pointer Logged Data** button on the Toolbar.
2. Select the point whose location you wish to move by double clicking on it in the Map View or by selecting **Edit > Logged Data > Logged Points** and then selecting it from the list in the **Logged Items** dialog box. The **Logged Data Info** dialog box will be displayed.



3. Click on the **Edit** button to display the **Edit Point Location** dialog box.



4. Enter the new coordinates and the elevation by highlighting the field and typing in the new values.
5. When you are satisfied with the entered data, click on the **OK** button to accept the changes. You will be prompted that the changes will be made and returned to the **Logged Data Info** dialog box.
6. Click the **OK** button to return to the Map View.

Editing Attributes

You can edit the attributes for a logged point by following the steps below.

Note: The Feature code that was used when the point was originally logged must be in the Feature file that is currently in use in order to edit the attributes of the point. All of your original menu selection items will be available.

1. Make sure that the Pointer Use is set to logged data by selecting **View > Pointer Use > Logged Data** or by clicking on the **Pointer Logged Data** button on the Toolbar.
2. Select the point whose attributes you wish to edit by double clicking on it in the Map View or by selecting **View > Logged Features** and then selecting it from the list in the **Logged Items** dialog box. The **Logged Data Info** dialog box will be displayed.

Name	Value
AREA	0.000000
PERIMETER	0.000000
HYDRANT_	0
HYDRANT_ID	0
ACAD_HAND	
HYD_NUM	
LABANGLE	0.00
OBJN	0
PNTANGLE	0.00
PROJ_	
SYS_ID	0

3. Click on the **Feature** tab to make sure that the feature and attribute information is displayed.
4. Click on the **Edit** button to display the **Edit Feature Attribute Values** dialog box.

@ AREA	0.000000
@ PERIMETER	0.000000
@ HYDRANT_	0
@ HYDRANT_ID	0
@ ACAD_HAND	
@ HYD_NUM	
@ LABANGLE	0.00
@ OBJN	0
@ PNTANGLE	0.00
@ PROJ_	
@ SYS_ID	0

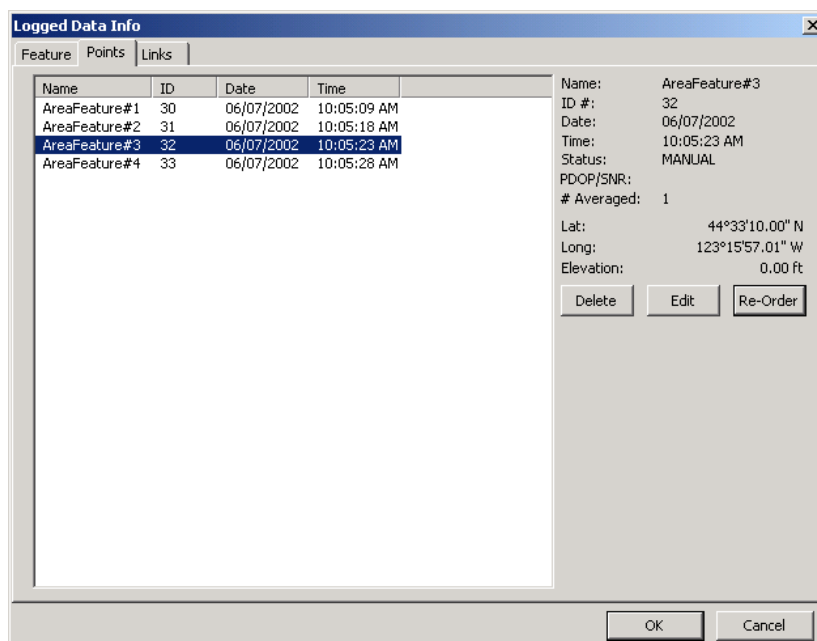
5. You may edit any of the attributes within the limits of the parameters established in the Feature File.
6. Click on the **OK** button to save the changes and return to the **Logged Data Info** dialog box.
7. Click on the **OK** button to return to the Map View.

Deleting Points

You may delete points from the current project by using the following steps. Points that have been deleted will be removed from the Map View, and will be excluded from any calculations and any exported files.

DELETED POINTS CANNOT BE RECOVERED!

1. Make sure that the Pointer Use is set to logged data by selecting **View > Pointer Use > Logged Data** or by clicking on the **Pointer Logged Data** button on the Toolbar.
2. Select the point that you wish to delete by double-clicking on it in the Map View or by selecting **Edit > Logged Data > Logged Points** and then selecting the point from the list in the **Logged Items** dialog box. The **Logged Data Info** dialog box will be displayed.



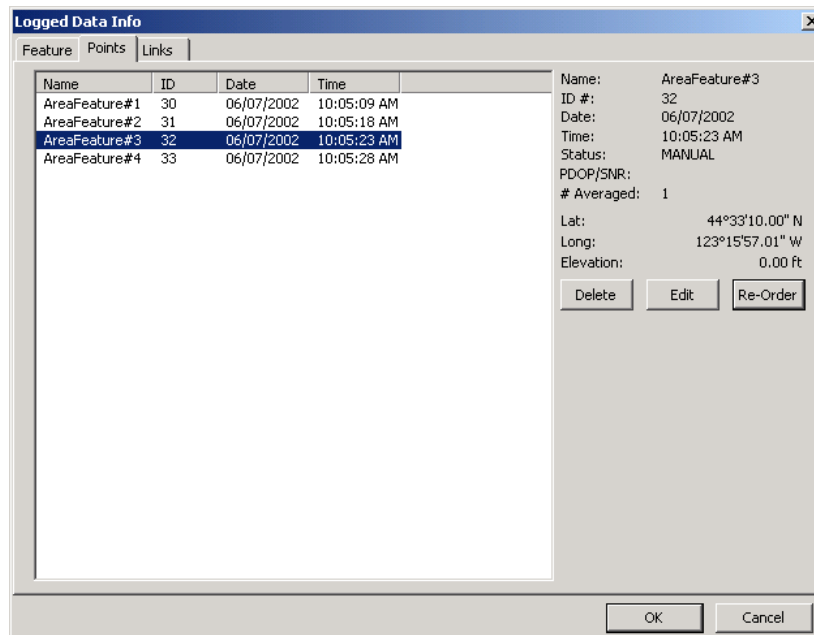
3. Click on the **Delete** button to remove the point from the current project.
4. You will be prompted to confirm that you wish to delete the point. Click the **Yes** button to confirm the deletion and return to the Map View.

Re-ordering Points

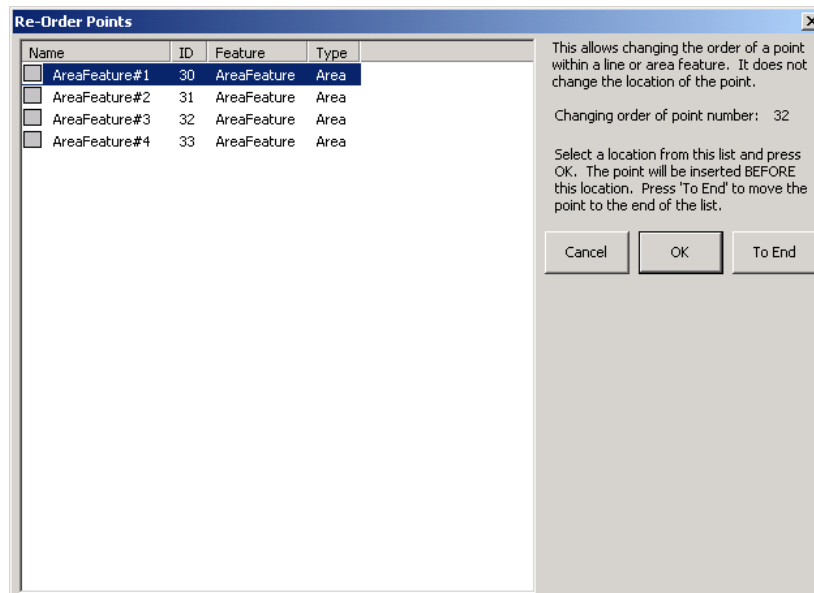
SOLO Office will allow you to re-order the points that make up a Line or Area feature by using the following steps.

1. Make sure that the Pointer Use is set to logged data by selecting **View > Pointer Use > Logged Data** or by clicking the **Pointer Logged Data** button on the Toolbar.

2. Select the point that you wish to re-order by double clicking on it in the Map View or by selecting **View > Logged Features** and then selecting it from the list in the **Logged Items** dialog box. The **Logged Data Info** dialog box will be displayed.



3. Click on the **Re-Order** button to display the **Re-Order Points** dialog box.



4. The ID of the point to which has been selected for re-ordering will be displayed on the right side of the dialog box.
5. Select a point from the list by clicking on it. The point selected for re-ordering will be inserted immediately before the highlighted point.
6. You may also click on the **To End** button to move the selected point to the end of the list.
7. Click on the **OK** button to make the change and return to the **Logged Data Info** dialog box.

8. Click the **OK** button to return to the Map View.

Redlining

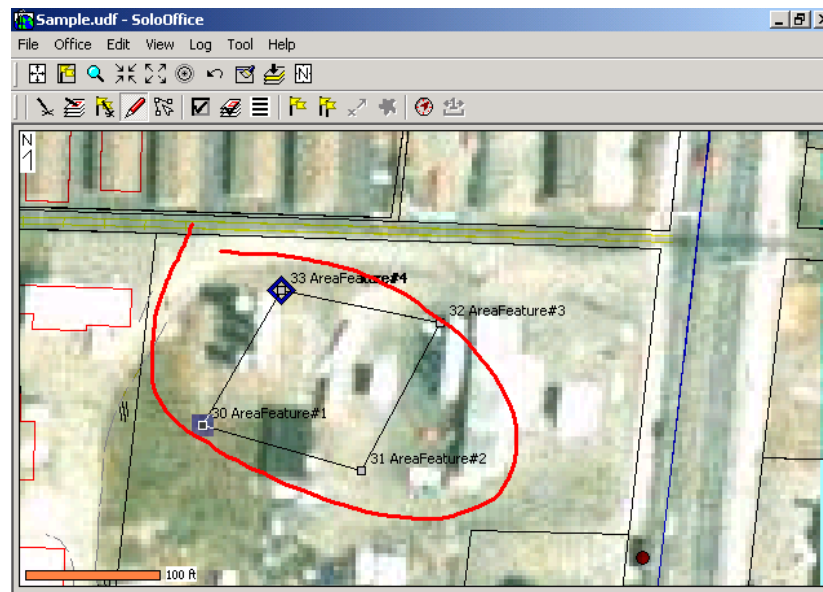
The Redlining function allows you to draw over the top of the basemaps, images and logged data in your project. The Redlining function also allows you to drop notes into your project that are not referenced to a specific feature.

To use the Redlining function, click on the **Redlining** button in the Mode Toolbar, or select **View > Pointer Use > Freehand Redlining**. Once you are in Redlining mode, you can make freehand drawings or drop notes using your mouse pointer.

The Redlining objects and notes will be added to and stored in a “CAD” layer within your project, and you have the ability to change the properties of each redlining object, as well as adding attributes to the object.

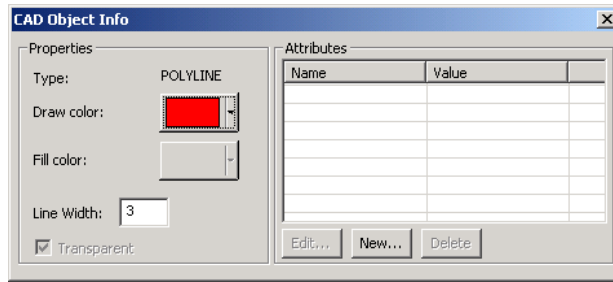
Freehand Redlining

When you are in Redlining mode you can make freehand drawings by clicking and holding the right mouse button and dragging the mouse pointer along the line you wish to draw. A red line three pixels wide will be placed as you drag the mouse pointer.



Redlining Object Properties

To view and edit the properties of a redlining object you must be in Logged Data mode. Select **View > Pointer Use > Logged Data** or click on the **Logged Data** button in the Mode Toolbar. Once you are in Logged Data mode, double-click on the redlining object to display the **CAD Object Info** dialog box.

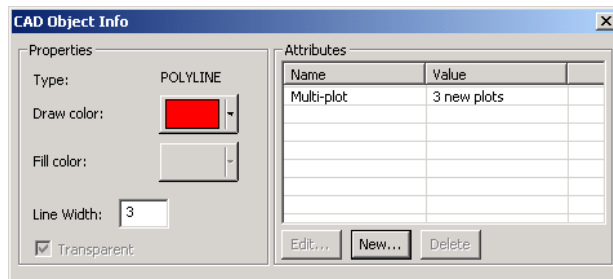


You can change the color of the redlining object by clicking on the **Draw Color** button.

You can change the line width of the redlining object by entering a new value in the **Line Width** field.

You can also add attribute information by clicking on the **New** button, then entering the attribute and the value.

You can add as many attributes as necessary by clicking on the **New** button.

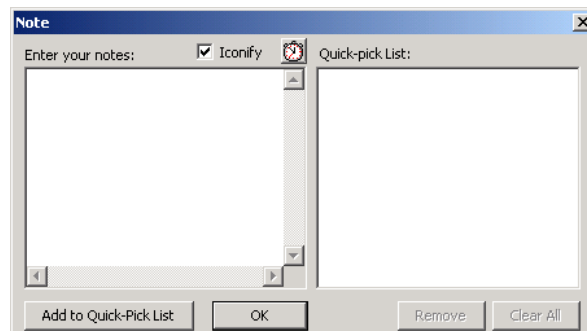


After an attribute has been added, the **Edit** and **Delete** buttons will become active. Highlight the attribute that you wish to edit or delete and click on the appropriate button.

Click on the X in the upper right hand corner of the dialog box to close it and return to the Map View.

Redlining Notes

The redlining function also provides the ability to drop notes onto the map view. When you are in redlining mode, click once on the Map View at the point where you wish to drop a note, then select **Drop a Note** from the menu that is presented. The **Note** dialog box will be displayed.



You can type your note into the left-hand column in the **Note** dialog box, or you can select items from the Quick-pick list in the right-hand column by double-clicking on them.

If you would like to add a time/date stamp to your note, click on the alarm clock button.

By default, your note will be indicated by an icon in the Map View. If you would like to display the entire body of the note, uncheck the box labeled **Iconify**.

Click on the **OK** button to save the note and return to the Map View.

Quick-pick List

You can generate a Quick-pick List of note entries for easier data entry. To create the Quick-pick List, first enter the note text in the left-hand column. Then click the **Add to Quick-Pick List** button. The note text should then appear in the right-hand column. The next time you drop a note, the note that was added during the previous note should be listed in the Quick-Pick List.

Note: The note must be saved by clicking the OK button in order for the Quick-Pick List to be updated.

You can remove an individual entry to the Quick-pick List by highlighting it and clicking on the **Remove** button.

You can clear the Quick-Pick List by clicking on the **Clear All** button.

Deleting Redlining Objects

There are two options for deleting redlining objects; **Delete Last Mark** and **Clear All Marks**. Both options are available by clicking once in the Map View while you are in Redlining mode.

Delete Last Mark

Click once in the Map View, then select **Delete Last Mark** to remove the most recent redlining object. This function will delete the last redlining object added to the Map View, whether it is a redline object or a note.

Clear All Marks

Click once in the Map View, then select **Clear all Marks** to remove all of the redlining object (redlines and notes) from your project.

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