FIELDPRO

CVEC User's Guide

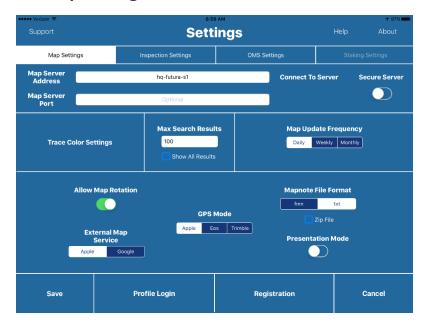


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1. SETTINGS CONFIGURATION

1.1 Map Settings



1.1.1 Map Server Connection

The Map Server Address should be hq-futura-s1 and the Map Server Port should be blank.

1.1.2 Trace color Settings

(Settings/Trace Color Settings)

User is able to configure the color of his/her choice here. Click on the words of the one you are wanting to change and then click the color. Once you are done making changes click **Close**.

- 1. Selection- when a selection is made upon tapping
- 2. Flash –flashing highlight
- 3. Search Results resultant feature after a Search function
- 4. Trace Upline highlight a trace upline
- 5. Trace Downline highlight the trace downline



1.1.3 Max Search Results

This configuration allows user to control his result records. User can specify the maximum number of resultant records displayed after a search is performed. The app default is set to 100. Checking "Show All Results" displays all resultant records of a search.



1.1.4 Map Update Frequency

FieldPro will look for a newer geodatabase on the map server and periodically download based on the selected option --daily, weekly or monthly.



I have set this up for daily.

This update setting is for how frequently the app is going to check for the data the person still has to download it.

1.1.5 MapNote File Format

Have this set to .fmn. and have the Zip File box unchecked.



1.1.6 Allow Map Rotation

Enable or disable the ability to rotate map frame (screen rotation) as the user moves his iPad



I have already set them up to rotate

1.1.7 External Map Service

1.1.7.1 Creating Google offline map

Each iPad user needing an offline map must first log into Google Maps using a unique Google account. You cannot use "Offline areas" without being logged into Google.

Step 1 – zoom to the extents of your utility service territory then pick Offline Areas from Google menu and tap + button at bottom and then tap download. You can name the map whatever you want.

1.1.7.2 Turn-by-turn voice direction

This section describes how to view FieldPro map and use Apple or Google turn-by-turn voice direction simultaneously.



Step1 – Tap Route To, after it calculates the route tap Back to FieldPro at the top left of screen.

Step 2 – Tap GPS from FieldPro menu and tap **Follow Me**. Follow Me will auto rotate and pan the map as the iPad moves provided the GPS can get a signal.

I have already set them up as Apple

2.FIELDPRO COMPONENTS

Futura FieldPro main page consists of 4 Major components

- 1. Bottom Application Toolbar -- ribbon of tools for executing main map navigation functions
- 2. Top Toolbar Individual toolbars for editor (field data collection), mapnotes (redline sketches and bookmarks) and OMS tools. We will only use it for mapnotes
- 3. Map Area -- Encompasses the entire screen that displays map data. Top right corner displays the northing, bottom right displays the dynamic map scale and the bottom left has the ESRI logo.
- 4. Side Panels Blue triangles expand or collapsible the side panels that display information when called for.



2.1. Search

Search is the first button from left on the bottom toolbar that enables a user to perform a search on fields in the geodatabase.



2.1.1 Designating Search Rule

Under "Search" text field, user can designate custom "Search Rules". Screenshot below shows "Default" as a Search Rule here. "**Default**" search is a "like" query and will query for the keyed in character string occurring anywhere in a feature class

❖ Default: Works as a "Like" operator in ESRI searches/selections. For example, user enters the letters "An" with Consumer− Name as the Quick Search criteria. The expected results might be "Andre" or "Bandera" or "Kingman"



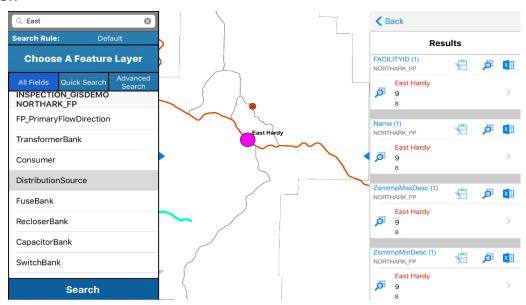
- Exact Match: Will search the exact text typed
- **Starts With**: The field that is searched will look for the characters entered by the user on the left (at the beginning) of the field value.
- **Ends With**: The field that is searched will look for the characters entered by the user on the right (at the end) of the field value

❖ Not Equal: Works as a "Not" operator. All values except the value the user enters will be returned. So if a user enters "An" in Consumer – Name search, expected results will contain "An" somewhere in the values returned, but no records will be returned that do actually have "An" in the field's value.

2.1.2 All Fields Search

'All Fields' search will search for the value keyed into the search field, across all fields within a selected feature class or layer.

For example, if user wants to find a Substation starting with "East". User would select the "All Fields" tab and touch "DistributionSource" feature class. Enter "East" in the search field and touch "Search". The "Results" panel will appear on the right and give all results for that search criteria. The map will highlight with a magenta symbol on the appropriate Distribution Source.

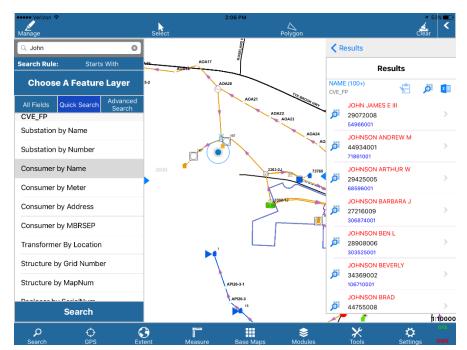


2.1.3 Quick Search

"Quick Search" tab is similar to the QuickFind search in Futura Map and functions based on configuration set up in the Futura_QuickFindSettings table of the production GDB. All QuickFind searches are configured to search for a specified field in a specified feature class.

For example, if a user wants to find a consumer named "John" - he would select "Quick Search" tab and highlight "Consumer by Name" (FeatureClass-Field) then enter "John" in the search field and click "Search". The "Results" panel will appear on the right and give 100+ results" in the database. Selecting one of the results will zoom-to the corresponding location on the map and will also expand the attribute details on the right panel for

the selected record. Or touching the lens



beside the 100+ would mark all "John" found in the map.

2.1.5 Components of Results Panel

After a search has been made in the left search wizard panel, the results will be returned on the right side. The Results panel has a header tool bar followed by all possible results for the search criteria given.

NAME (100+) The Result panel displays the name of the feature class, or Field the query was made on and the number of results returned is in parenthesis

Inspect: Opens up Futura Field Inspection. The icon is greyed out if no inspection form is configured. *We are not using this at this time.*

Tap the magnifying glass to see the **identify window** with two options

Zoom To: Zooms to the feature on the map.

Flash Selected: The light bulb icon flashes the feature on the map.

Table View: Allows user to view selected records

NAME (100+) CVE_FP SMITH ADAM 26796005 310527001 SMITH ANDRE A 38654023 306906001 SMITH ANGELA 31287027 82939003 SMITH ANTHONY N 31489007 114216001

Results

X

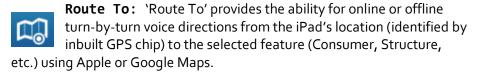
O

2.1.6 Results Panel toolbar

When a search record thumbnail is taped the side panel flows out to the next page listing all attribute information. User can drill into the attribute information back and forth.

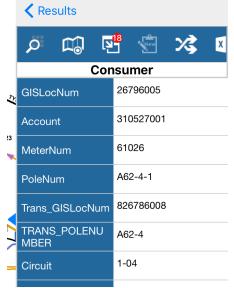


Zoom To: Zooms to feature



**Apple Maps requires internet connectivity in order to provide directions.
**Google Maps proides both online and offline directions. FieldPro Map

Settings provides an option to pick Google or Apple Maps (Refer to 1.1.7 External Map Service to how-to-configure).





Related Records: related records to the identified feature can be viewed. For example,

- Click on a consumer it will show in red superscript circle the count (here it is 18) indicating 18 other related records available across multiple feature class
- Click on a transformerbank it will show in red superscript circle the count (4) of related feature, such as a 2 Consumers, a structure, and an AssetTransformer.

Note: From each result user can interact to understand all relations a selected attribute may have across other network or component feature classes



Inspect: allows user to open relevant inspection forms available for the selected feature class

We are not using this at this time.



Trace All: Opens the facility network Trace Tasks panel which contains a variety of trace options like Faults, Upline and Downline traces.



Table View: Allows user to view all records selected.

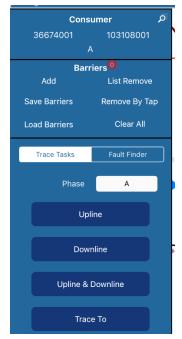
2.2 Trace Panel

The trace panel pops up in the left of the iPad every time user clicks the trace button after making a selection of a single feature on the results panel.



The trace panel has 4 major functions to enhance the tracing task.

- Display the selected features detail in the top.
- Barrier information and functions
- Trace Functions
- Fault Finding Functions



Consumer

TransformerBank (1)

UpnLocationData (1)

UpnAccountData (1)

UpnMeterData (1)

UsageData (14)

CVE_FP

CVF FP

CVE_FP

CVE FP

CVE_FP

Results

Ø

2.2.1 Feature Selected

When a consumer is selected. The selected feature panel shows the feature class name of the selected record EX: "Consumer" The GISLocNum (left side) and the Account# (right side) of the selected feature are in the second row. The third row displays the phasecode.

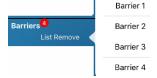


2.2.2 Barriers

Barriers can be set up to stop the trace up or down the line at certain points

- Add: User touches add to insert barrier at a tap start.
- Save Barriers: Allows user to save barriers in a session in groups.
- Load Barriers: Allows user to load back the barriers he saved
- List Remove: Allows user to pick individual barriers from the map to remove.





Remove By Tap: The red symbols indicate the two Barriers inserted on the two taps. Select "Remove By Tap" allows user to touch a tap to remove barriers from it.



- Clear All: Users can clear all existing barriers from the map. This does not clear the saved barriers.
- **Any time user removes barrier he needs to select save again to keep updating his removals

2.2.3 Trace Tasks Trace Tasks

The Trace Tasks functionality allows user to make a network trace on features of the Electric Network dataset. These traces can be conducted by specific phase. The three types of traces are Upline, Downline, Upline & Downline and TraceTo.

Trace by Phase: User can specify the Phase condition to use while running the tracing up or down the line.

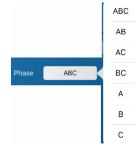
** Typically tap on a 3 phase line and change phase to a single phase and trace downline.

Upline: Does an upline trace from the selected feature to the Substation. For example, select Fusebank or Transformerbank and click on "Upline" to trace up to the distribution source from the selected feature

Downline: Does a downline trace from the selected feature

Upline & Downline: Does both an upline & downline trace from the selected feature. For example, select a Fusebank and click on "Upline & Downline" to trace up to the distribution source and trace down to a consumer downline.

TraceTo: TraceTo is intended to be used in conjunction with the Upline trace task and permits users to modify the upline trace to stop the trace at a user defined primary span. Perform an Upline trace, reopen the Trace Task panel, zoom into a span along the highlighted trace path, tap the TraceTo button and tap on a primary line, a pop up should appear displaying the PrimaryConductor Mapnumber, tap it and the trace path will reselect features from the original trace start feature to the feature tapped using the TraceTo button.





2.3 Fault Finder

Fault Finder

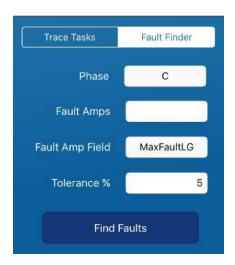
This tool helps user find a cable fault.

Phase: Specify the phase of the line which needs to be inspected for faulted line.

Fault Amps: The Amps that is considered to be a fault.

Fault Amp Field: Field name where the fault amps are stored in the Primary conductor feature class

Tolerance %: specify a fudge factor from the fault amps to search for PC that may be susceptible to faults. Higher the Tolerance more the result. Lower the tolerance more accurate will be the results



**User can follow these steps to locate faults if the database consists of Fault Amp values for the Primary conductor from the engineering analysis data.

- Search or select a protection device (RecloserBank)
- ❖ Key in the amps value (Line to Ground, Line to Line, etc.) that was recorded by the Recloser AMR device.
- Pick the field where Fault Amp values are stored within PrimaryConductor typically MaxFaultLG
- Pick the Phase the fault occurred on
- Set a tolerance factor, the tool will return primary lines that have Fault Amp value above and below the value set in above steps.

2.4 GPS



The GPS tools helps field personal to conduct spatial audits with more ease and accuracy.

GPS On Off

Tap the GPS icon, second from left on the bottom ribbon to activate the GPS options.

Zoom To Me

Zooms to current location of the iPad

Follow Me

Places the map into an auto-moving map with the direction (bearing) also orientated to straighten up on the device. The map will auto-rotate and pan as the iPad moves (driving or walking etc.).

GPS Tools

User can tap this to enable the GPS tool bar that pops up on the top right corner of the map area.

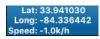


Stamp Stamp button is for creating a new field inspection point feature at the location of the iPad. The latitude/longitude is acquired by the internal or an external GPS receiver and stamped into the relevant fields. **We currently are not using Field Inspection

^{**}Fault current values per primary line section must exist in PrimaryConductor in order to use this tool.



Stream option is not currently implemented but is intended to allow user the ability to "draw" line features by "streaming" vertices.



Displays the current latitude, longitude of the user and the speed with which he is travelling



Displays the vertical and horizontal accuracy of the GPS coordinates. These values are interpreted by Apple Map and are **not** the actual value in Feet.

**Apple Map interprets a value of less than 5 is approximately equal to less than 5-10 feet.



Gives the altitude where the IPad is in meters



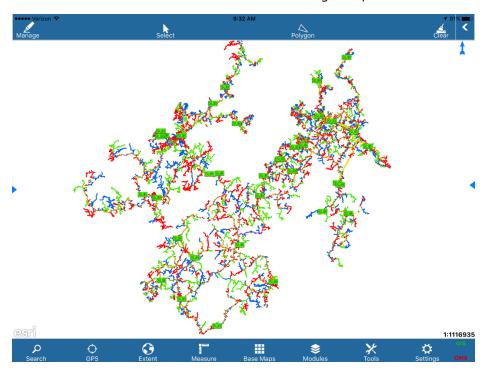
In the GPS Setting users can configure a visual (Green if value is less than value set and Red if it is above) notification of the approximate accuracy of the GPS.

**Turn GPS off to prolong iPad battery life

2.5 Extent



Full Extent enables user to see all of his data in a single map view.



Tap the Extent icon, third from left on the bottom ribbon to activate the Extent options. There are three options:



Full Extent: Zooms to the full extent of the current database being used



Previous Previous Extent: Zooms to the previous extent

Next

Next Extent: Zooms to the next extent

2.6 Measure



The Measure tool lets you draw on the map to measure lines. For example, you can draw a line on the map and get its length and/or draw around a polygon feature to get its circumference.

When user clicks on the measure tool a small tool bar pops up with 5 elements



X: closes the toolbar



Clear: Clears the red lines drawn on the map to measure



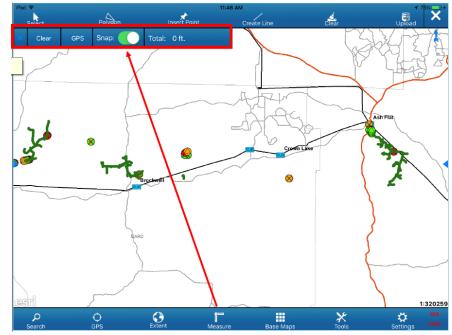
GPS: drops GPS points of the current location



Snap: enables snap option allowing user to snap to an existing point on the map while measuring.



Total: displays total measurement made



2.7 Base Maps



For base maps and imagery, tap the Base Maps icon which will provide a selection of background imagery and maps available for use in FieldPro. Scroll down to see all available base map options categorized as **My BaseMaps**, **ESRI BaseMaps** and **Personal**.

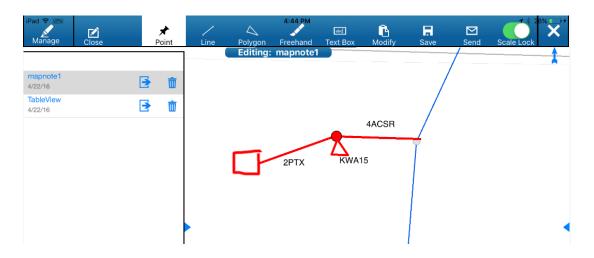
- My BaseMaps displays Tiled Map Packages (.TPK) downloaded to FieldPro using the FieldPro download capability. The tpk must be zipped and copied to the FieldPro directory on the FieldPro server.
- **ESRI BaseMaps** are free online maps available to ESRI users who are connected to internet by selecting them.
 - **a fast (>5mbps) WiFi connection is required to view a ESRI basemap. **The transparency slider allows user to lighten the base map to make the system map more pronounced.
- Personal are basemaps (tpk tile package format) copied to the iPad via iTunes. This is the preferred option for viewing utility owned aerial imagery on the map especially if disconnected from the internet.



2.8 Modules

The only option available at this time in this tab is MapNotes Mapnotes provides users the ability to:

- Draw point, line or freehand, insert text as redlines and save it as mapnote
- Add, Delete, Modify and Save mapnotes
- Send a Mapnote via Email



2.8.1 Selection Mapnote Toolbar:

- Tap Modules> Mapnotes.
- User sees the Selection Mapnote Toolbar on the top
- Tap Manage to collapse left panel with lists of available mapnotes.
- Create Mapnote button allows user to create new mapnote.

The selection mapnote tools (4) are visible when user selects Modules>Mapnotes>CreateMapNote or Selects an already created mapnote.



Manage: Slides out the Mapnote list in the left panel. With current list of mapnotes and an option to create new mapnotes

*Tap on a mapnote listing to zoom to the mapnote on the map and immediately switches to expanded mapnote toolbar puts user into "edit mode"



Create MapNote: Tap create mapnote to start a new sketch.





Send & Delete: These icons beside a mapnote allows user to 'Send' the mapnote by email or Delete mapnote



Close: Closes user off an edit session. But warns user to save his session. Close takes user to the basic Mapnote/Selection toolbar



Text Box: User can type in a note or comment in any part of the map and create mapnote with just text inserts.

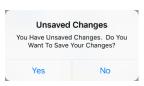


Save: User can save his redline inserts in a mapnote by clicking the 'Save' button



Send: User can send his mapnotes by email using the iPad email client.

- **Edit session is disabled when user saves a mapnote.
- **Click on Mapnote listing again to start a fresh edit session.
- **If user closes the toolbar or the switches to another mapnote between edits. User is prompted to save changes.



**These are the options we will be using at this time. We will discuss the others as we start using them.

Mapping Tools



The FieldPro Tools comprises of a briefcase of toolboxes and controls. To connect to user database and to activate various tool options, tap the following three functions.

- Map Control
- Layer Control
- Table View

3.1 Map Control

Download Map –indicates the map is available to download

Download Status bar – Tap download icon to start a download. Note, the download progress scale showing an advancing blue line over gray at the bottom of the map area.

CSIA fud: 2971kb / 41058kb 1:1373383



New Map Ready prompt – Once download is complete a message appears for user interaction. Click on the "Use now" option to view the map. Click Wait to continue using the current version of the map.

- Map Viewing –A Square with a check on it indicates the data that the map area is currently showing.
- **Delete Map** swipe left on a map tap the trash icon to delete the map from the ipad.



Delete Prompt – the user has a warning prompting him to confirm his delete action



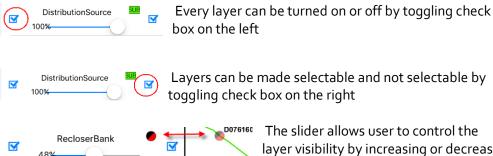
Refresh Map – will downloaded and overwrite the map with a new one from the GIS server.

3.2 Layer Control

Layer Control

Layer Control is collapsible panel on the left side of the map area that pops out when user selects Tools>Layer Control. The user has options for layer visibility, selectability, and displays feature symbology. The user can also enhance or diminish the layer transparency.

This is the Table of Content for the Geodatabase the user is viewing. User can perform the following operations here.

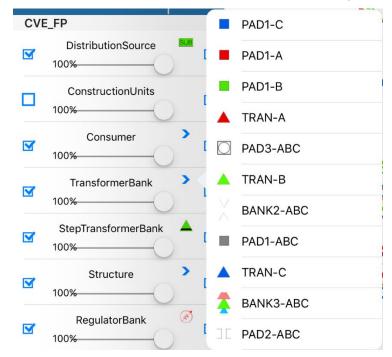




Recloser Bank icon appears translucent.

layer visibility by increasing or decreasing the transparency. Note that the Recloser Bank is reduced to 48% and so on the map the The arrow beside a feature class (In this case TransformerBank) indicates that these have multiple symbols categorized

based on a unique value



3.3 Table View

Table View will display selected records in a tabular grid.

•••• Verizon 🕏		6:59 AM				→ 100% ■	
Consumer (100 Records)		Select Subset Related Tables Inspect			View On Map	CSV Clear Close	
	PoleNum	wmextdbo_ServiceLocation_Ext_PO	wmextdbo_ServiceLocation_Ext_TR	Telephone	MeterNum	Name	
€	X B87-10-2-2		B87-10-2-2	5403605362	68755	SMITH SYLVIA	
€	X AF170-3.5-3		AF170-3.5-3	5404902338	32632	SMITH STEVE M	
€	X GCB76-1A		GCB76-1A	4349694733	31101	SMITH CHARLES	
€	X AX26-13UG-1		AX26-13UG-1	8043790574	71577	SMITH RICHARD M	
€	X F769		F769	4349834638	35352	SMITH WILLIAM A	
€	X C1B15-3UG-4-1 L19		C1B15-3UG-4-1 L19/20	4342862660	22992	SMITH KATHY WHITTEI	
Ð	X BCM3-422		BCM3-L421/422	4342964077	50077	SMITH CLYDE RAY	

Consumer (100 Records) Message on top left corner of the tablet displays the

Feature Class and the total record count the table displays.

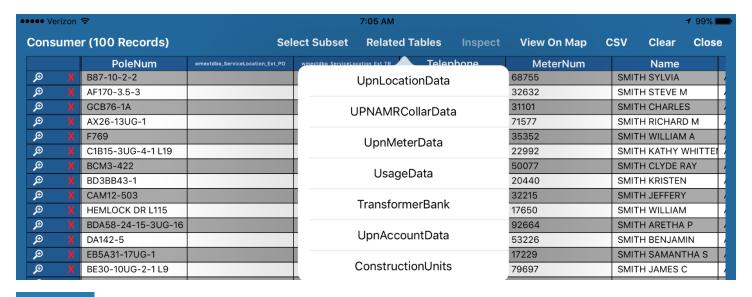
Select Subset

Select Subset – allows user to decide on the number of records

Related Tables – User can pick and view the related tables to

the search records.





Inspect – Select Subset and Related Tables allows user to create a unique set of records for an inspection. Touch inspect

View On Map – Touch this to see all the search records highlighted in the map.

CSV – Users can export the search records to a comma delimited text file and email the file as a .csv.

Clear – Removes all records from the table.

Close – Closes the report window but does not clear the results from memory and users can re-open the results by tapping the Tools/View Table option.

Zoom – Allows user to 'zoom to' or 'flash' the feature on the map.



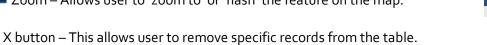
inspectionData

OK

ReportViewer
Please enter a file Name with

alphanumeric characters only

Cancel



^{**}This is greyed out because it is not available to us at this time.

3.4 Editor Tools (selecting more than one feature at a time)



Select: To select features on the map tap and hold until the blue circle disappears then drag a box across the map and release finger. All selectable features contained or crossing the box will be selected.



Polygon Select: Each tap on the map creates a vertex once a minimum of three are tapped click the Close Polygon. This will select features just like the Select tool does.

Tap "Start Over" to clear to re-draw a polygon.



Clear: Clears all selections made on the map

3.5 User Scenarios

Find Faults in Electric line

- 1. Search or select a RecloserBank
- **2.** Key in the amps value (Line to Ground, Line to Line, etc.) that was recorded by the Recloser AMR device.
- 3. Pick the field where Fault Amp values are stored within PrimaryConductor typically MaxFaultLG
- 4. Pick the Phase the fault occurred on
- 5. Set a "fudge" factor (Buffer/Tolerance), the tool will return primary lines that have Fault Amp value above and below the value set in above steps.
 - Fault current values per primary line section must exist in the PrimaryConductor in order to use this tool
- TraceTo is intended to be used in conjunction with the Upline trace task and permits users to modify the upline trace to stop the trace at a user defined primary span or devices.
- Perform an Upline trace, re-open the Trace Task panel, zoom into a span along the highlighted trace path, tap the TraceTo button and tap on a primary line, a pop up should appear displaying the PrimaryConductor

Mapnumber, tap it and the trace path will reselect features from the original trace start feature to the feature tapped using the TraceTo button.



Using MapNotes to create Bookmarks

- 1. Zoom to a location on the map you wish to save as a bookmark
- 2. Tap Modules/MapNotes. Then tap Manage icon on the top toolbar
- 3. Tap Create MapNote at bottom of panel
- 4. Tap Save and key in a name for the Mapnote and click OK
- 5. Tap Close icon on the top toolbar to close edit mapnotes tools
- **6.** Tap Manage icon again on the top toolbar to see your new bookmark mapnote in the panel list of mapnotes.