

## Mapping Field Boundaries Using Aerial Photos

**Michael J. Buschermohle, Professor  
Biosystems Engineering and Environmental Science**



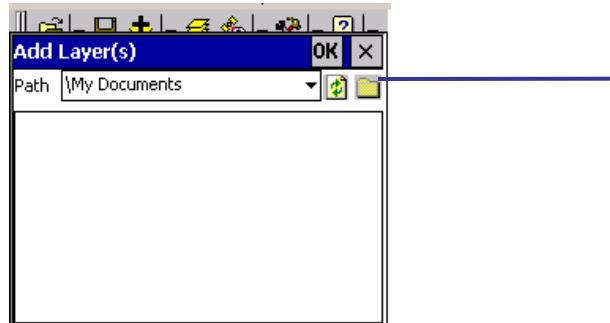
BEES 108

A Digital Orthophoto Quarter Quadrangle (DOQQ) is a computer-generated image of an aerial photograph in which image displacement caused by terrain relief and camera tilts has been removed. It combines the image characteristics of a photograph with the geometric qualities of a map. With ArcPad software, you can read

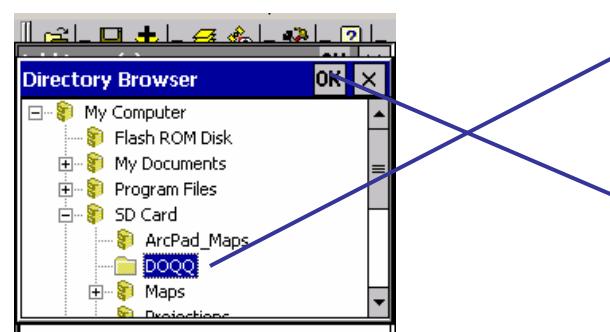
coordinates - latitudes and longitudes - from these images. You can measure distances along features such as fields, roads and buildings on the photographs. You can also use DOQQs as a base for developing new geographic data layers, such as mapping field boundaries.



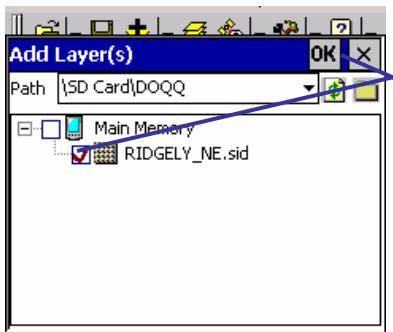
1. With ArcPad open, tap the Add Layer(s) button on the Main Toolbar.



2. Tap the Folder button to navigate to the folder where the image you want to add to the map is stored.

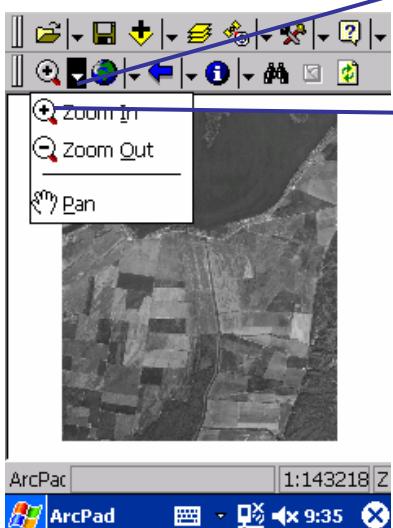


3. In this example, the aerial photo is stored on the SD Card in the DOQQ folder. Tap the DOQQ folder to select it.
4. Tap OK to navigate to the DOQQ folder.



5. Tap inside the box to the left of the file you want to add to the map. A red check mark indicates the file has been selected.

6. Tap OK to import RIDGELEY\_NE.sid into ArcPad.



7. The browser toolbar provides tools to move around your map. Tap the dropdown arrow to the right of the Zoom/Pan button to display the dropdown list of tools.

8. Tap the Zoom In button to activate the tool. Using your stylus, tap the screen at the edge of the field you want to zoom in on, then without lifting your stylus, slide the stylus diagonally across the map until the field is enclosed by a dashed rectangle. Lift the stylus and the zoom will be affected.

- When a tool is active, the tool's icon is displayed on the toolbar in a depressed mode and the icon in the dropdown list is highlighted with a red square. A tool is deactivated by tapping on the tool again or tapping another button. You can pan (move the map within the screen) using the same procedure

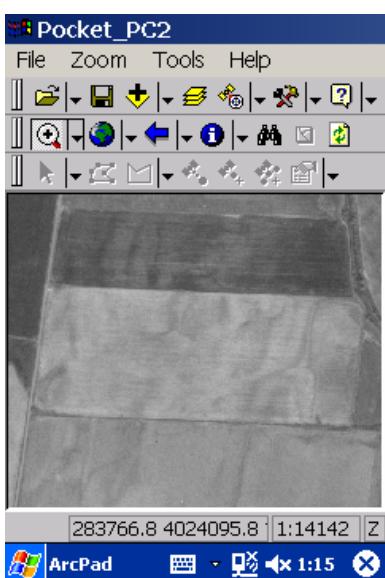
 Zooms in on the map using the stylus

 Zooms out on the map using the stylus

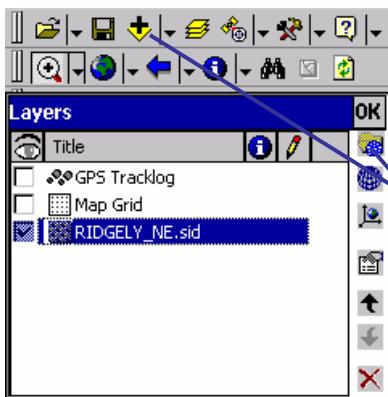
 Pans the map using the stylus

 Zooms to the full extent of the map

 Zooms back to the previous extent you were viewing.



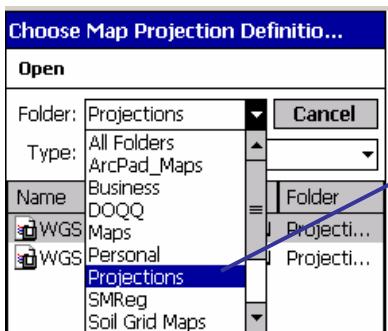
9. The next step is to project the layer in the Universal Transverse Mercator (UTM) projected coordinate system. Tennessee is divided into two, UTM zones. Most of the state lies in UTM Zone 16N. Portions of east TN lie in Zone 17N. In this example, RIDGELY\_NE.sid is in Lake County, thus use the UTM Zone 16N map projection.



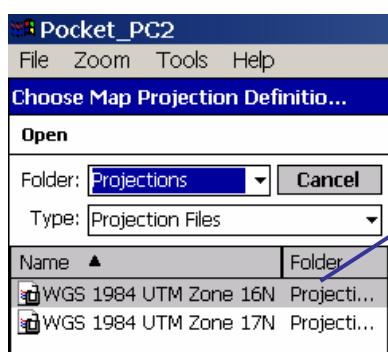
10. Tap the Layers button on the Main toolbar to open the Layers dialog box.

11. Tap the Choose Map Projection Definition File button.

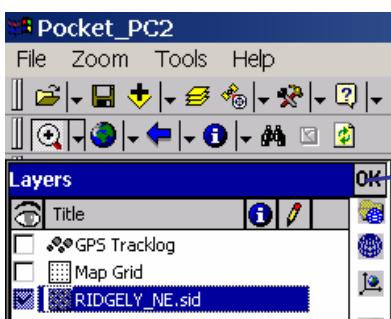
12. Navigate to the Folder where your projection file (.prj) is stored using the Choose Map Projection Definition dialog box. In this example, map projections are located in the Projections Folder.

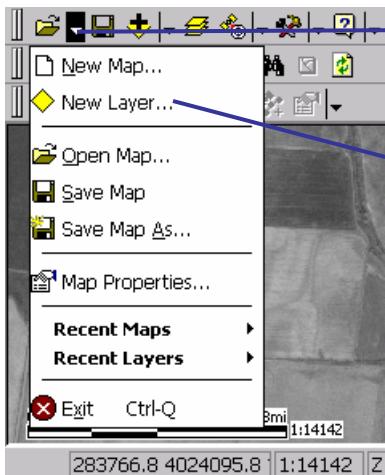


13. Tap WGS 1984 UTM Zone 16N

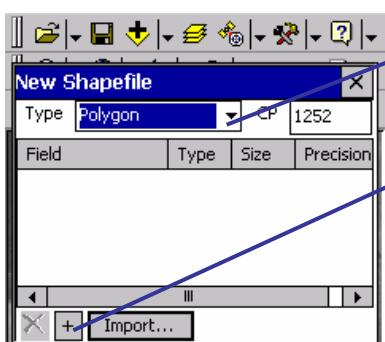


14. Tap OK

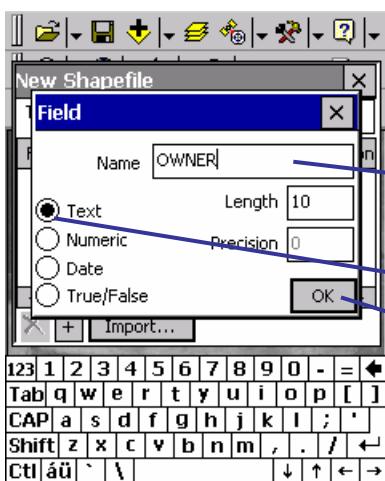




15. Next, you must create a new shapefile layer on which to draw the field boundary on. Tap the down arrow to the right of the Open File button to display the dialog box.

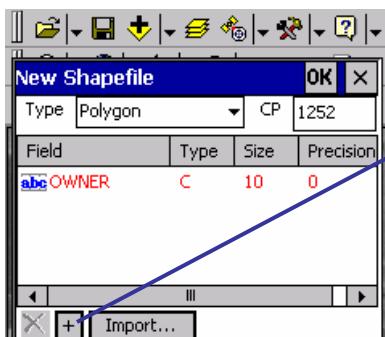


16. Tap New Layer. The New Shapefile dialog box is displayed on the screen.



17. Tap the Type dropdown arrow and Select Polygon from the Type dropdown menu.

18. Tap the plus sign button at the bottom of the New Shapefile window to open the Field Dialog box. The field dialog box allows you to define the fields and their corresponding attributes for your shapefile's attribute table. Fields can be any type of information such as the landowners name, name of the field you are mapping the boundary for, the date the field was mapped, who mapped the field, etc.

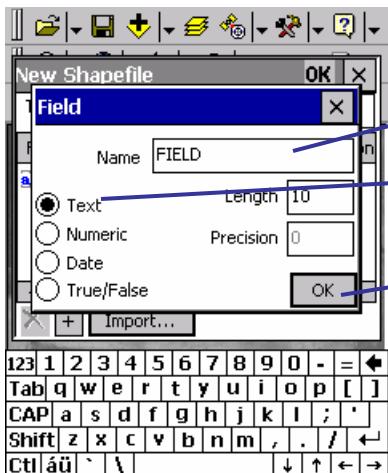


19. Using the keyboard and stylus, type Owner for the Name.

20. Tap inside the circle next to Text.

21. Tap OK

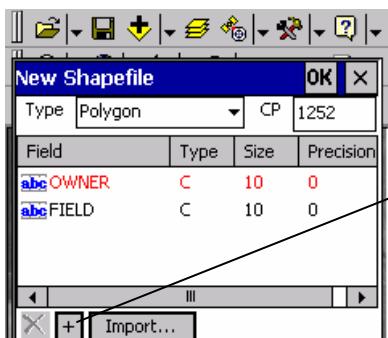
22. Tap the plus sign button at the bottom of the New Shapefile window to add another field to your Shapefile for example the name of the field for which you are mapping the boundary



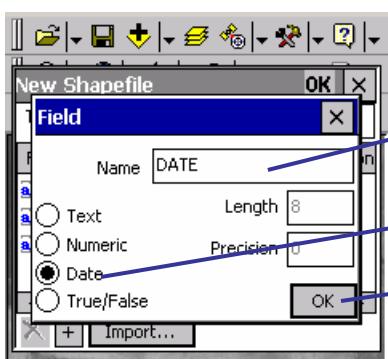
23. Using the keyboard and stylus, type Field for the Name.

24. Tap inside the circle next to Text.

25. Tap OK



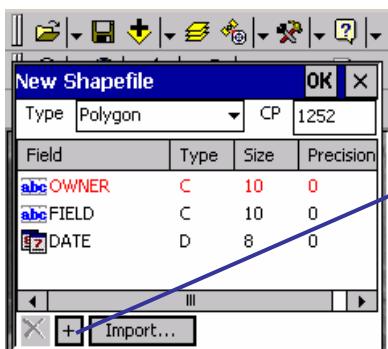
26. Tap the plus sign button at the bottom of the New Shapefile window to add another field to your Shapefile, for example the date you mapped the boundary.



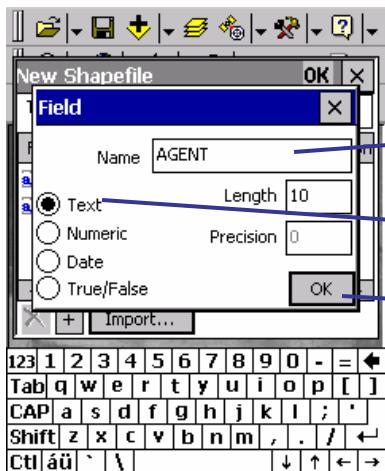
27. Using the keyboard and stylus, type Date for the Name.

28. Tap inside the circle next to Date.

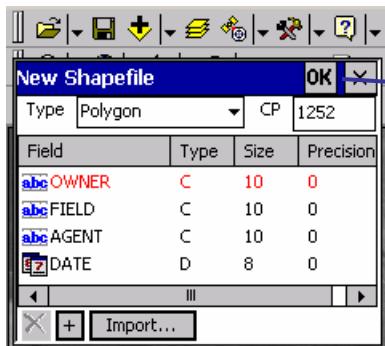
29. Tap OK



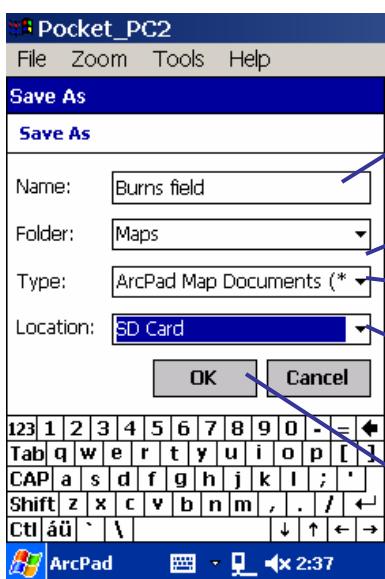
30. Tap the plus sign button at the bottom of the New Shapefile window to add another field to your Shapefile, for example who mapped the boundary.



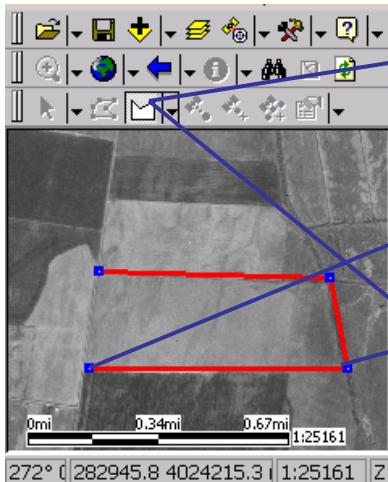
31. Using the keyboard and stylus, type Agent for the Name.
32. Tap inside the circle next to Text.
33. Tap OK



34. Tap OK. The Create New Shapefile Layer Save As Dialog box appears.



35. Tap inside the Name box. Name the shapefile, for example Burns field using the stylus to type on the keyboard.
36. Under Folder, tap the down arrow to obtain the dropdown menu, and select the Folder in which to store the shapefile; for example, Maps Folder.
37. Under Type, tap the down arrow to obtain the dropdown menu, and select Shapefiles from the dropdown list.
38. Under Location, tap the down arrow to obtain the dropdown menu, and select the location of the Folder from the dropdown list; for example, SD Card.
39. Tap OK when finished



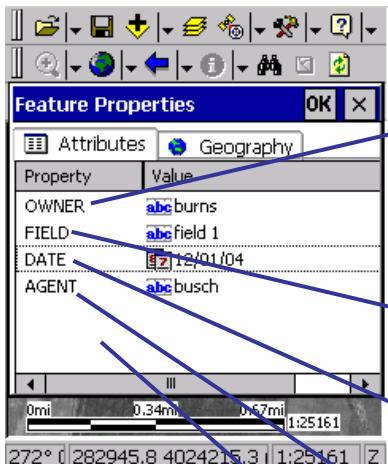
40. Tap the Polygon Feature tool to activate the tool.

41. Using the stylus, tap the map at one corner of the field to specify the position of the first vertex of the field boundary.

42. Tap the map again to specify the second vertex of the field boundary.

43. Continue to tap the map to capture additional vertices of the field boundary.

44. Tap the Polygon Feature tool to finish mapping the field boundary. ArcPad will automatically close the polygon by adding a final vertex with the same coordinates as the first vertex you created.



45. The next step is to add attribute information for the field boundary you just created. On the Attributes tab, tap on the Property field (i.e. Owner) to open the associated Value text box. Using the stylus and the provided keyboard, type a Value (i.e. description); for example, burns.

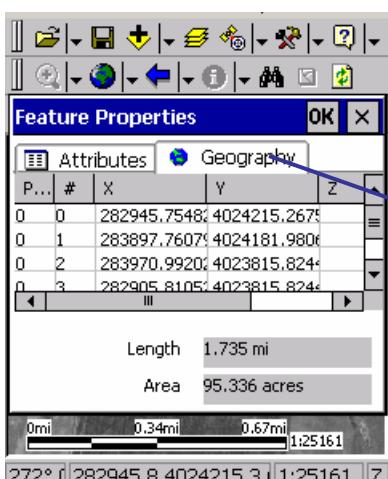
46. Tap on the Property field Field. Using the stylus and the provided keyboard, type a Value; for example, field 1.

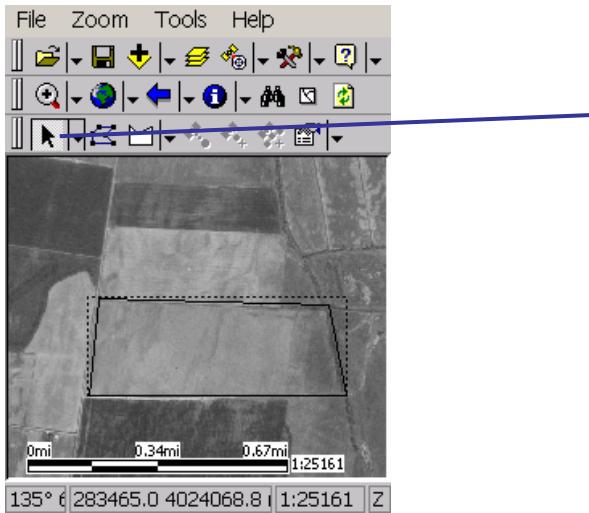
47. Tap on the Property field Date. Using the stylus and the provided keyboard, type the date in the Value text box.

48. Tap on the Property field Agent. Using the stylus and the provided keyboard, type your name in Value text box.

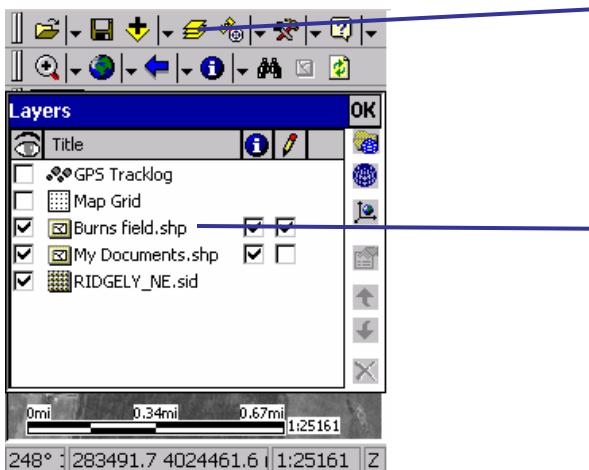
49. Tap anywhere on the screen to when finished

50. Tap on the Geography Page of the Features Properties dialog box. ArcPad calculates the perimeter and area of the field boundary (polygon) and displays them under the Geography tab in the Units





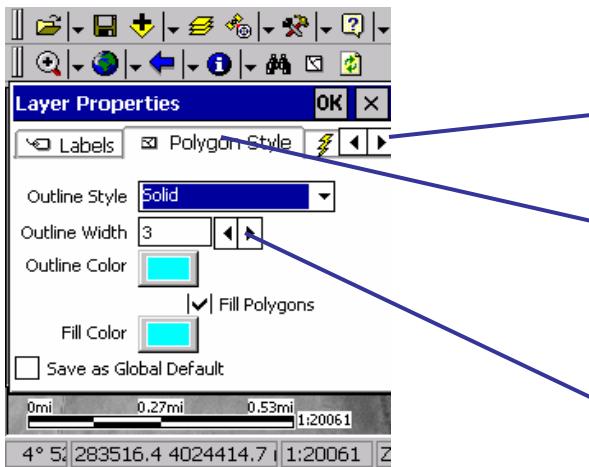
specified in the Display page of the ArcPad Options dialog box. The perimeter and area are not stored with the feature's attributes.



51. You can view the information contained in the Features Properties dialog box at any time by first tapping on the Select tool and then double tapping inside the field boundary.

52. You can change the line width, line color and fill color in The Layers Properties dialog box. Tap on the Layers button on the Main Toolbar to activate the Layers dialogue box.

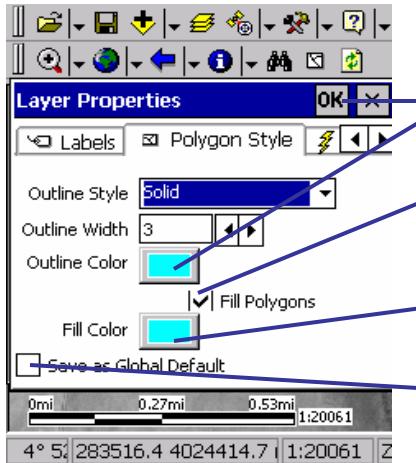
53. Double tap the Burns field.shp layer to open the Layers Properties dialog box.



54. Tap the forward arrow until the Polygon Style page appears

55. Tap the Polygon Style button. The Polygon Style page is used to specify display settings for the field boundary you created.

56. Tap the forward arrow to change the Outline Width of the polygon



57. Tap the button to change the Outline color of the polygon.

58. Tap inside the Fill Polygons box. When checked, polygons will be filled with the Fill Color.

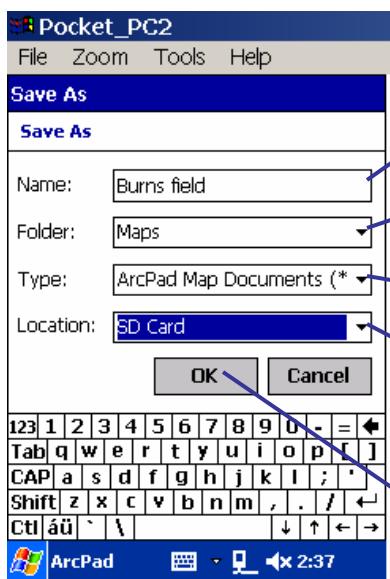
59. Tap the button to change the Fill Color of the polygon.

60. You can save these settings as your current Default setting by tapping inside the Save as Global Default box. These settings are only applied to polygon layers added to this map and all future maps after you tap OK.

61. Tap OK.



62. Tap on the Disk Save button on the Main Toolbar to save your map. The Save As dialog box appears on the screen.



63. Tap inside the Name box. Using the stylus, type a Name for your map using the keyboard; for example Burns field.

64. Under Folder, tap the down arrow to obtain the dropdown menu, and select the Folder in which to store the map; for example Maps.

65. Under Type, tap the down arrow to obtain the dropdown menu, and select ArcPad Map Documents from the dropdown list.

66. Under Location, tap the down arrow to obtain the dropdown menu, and select the location of the Folder from the dropdown list; for example SD Card.

67. Tap OK when finished to save your map.

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