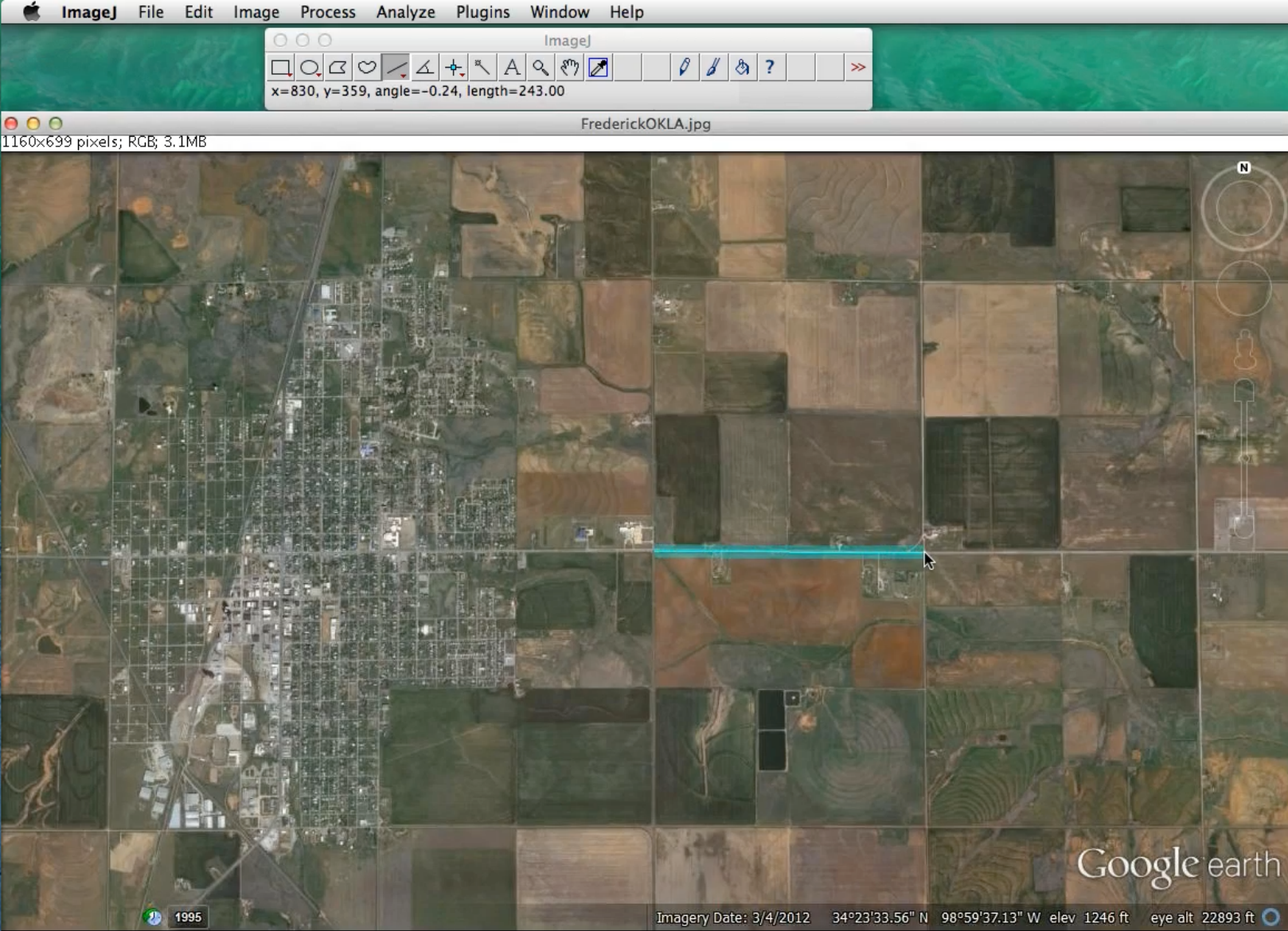
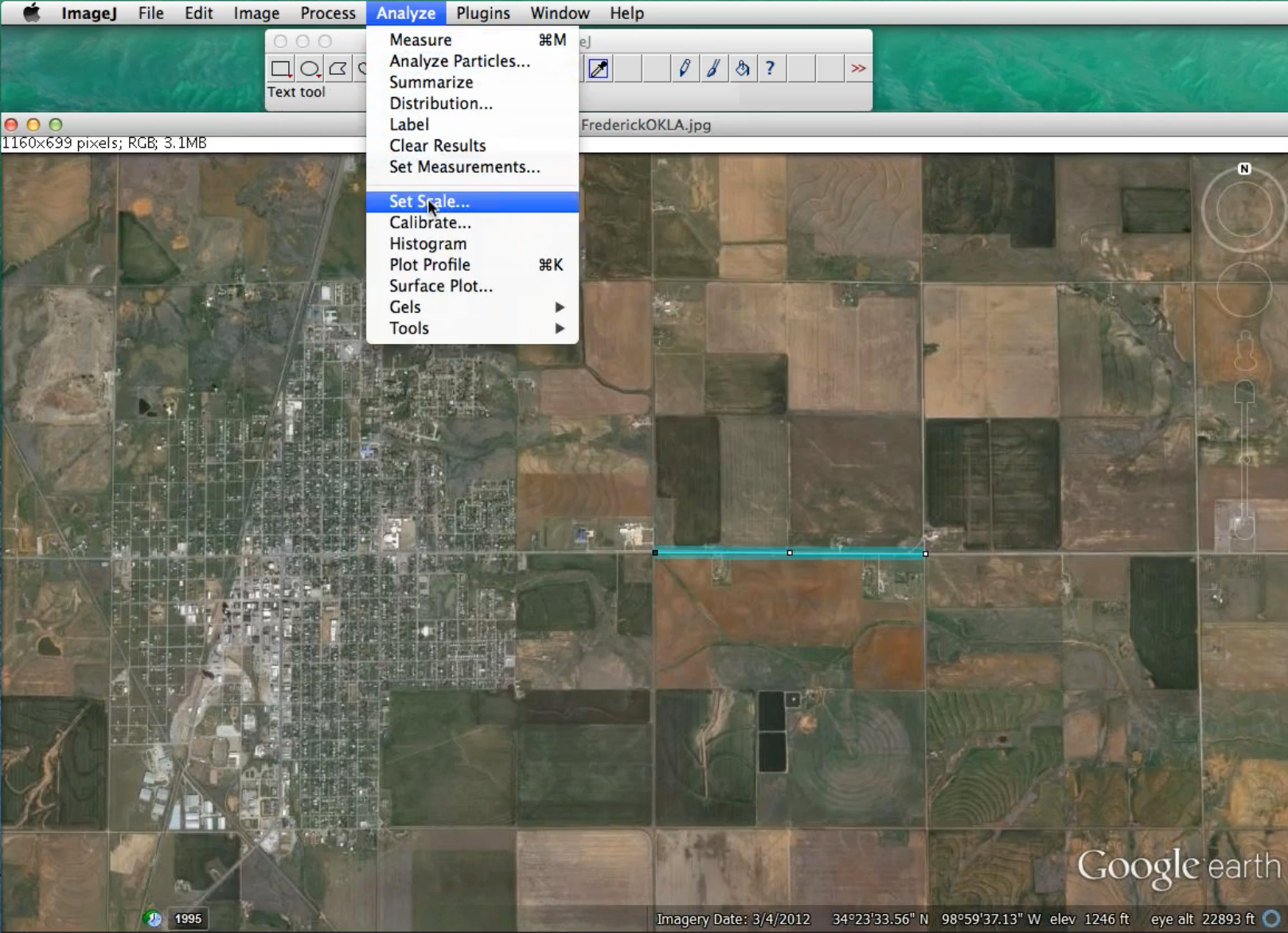


Starting with opening up “FrederickOKLA” image within ImageJ.

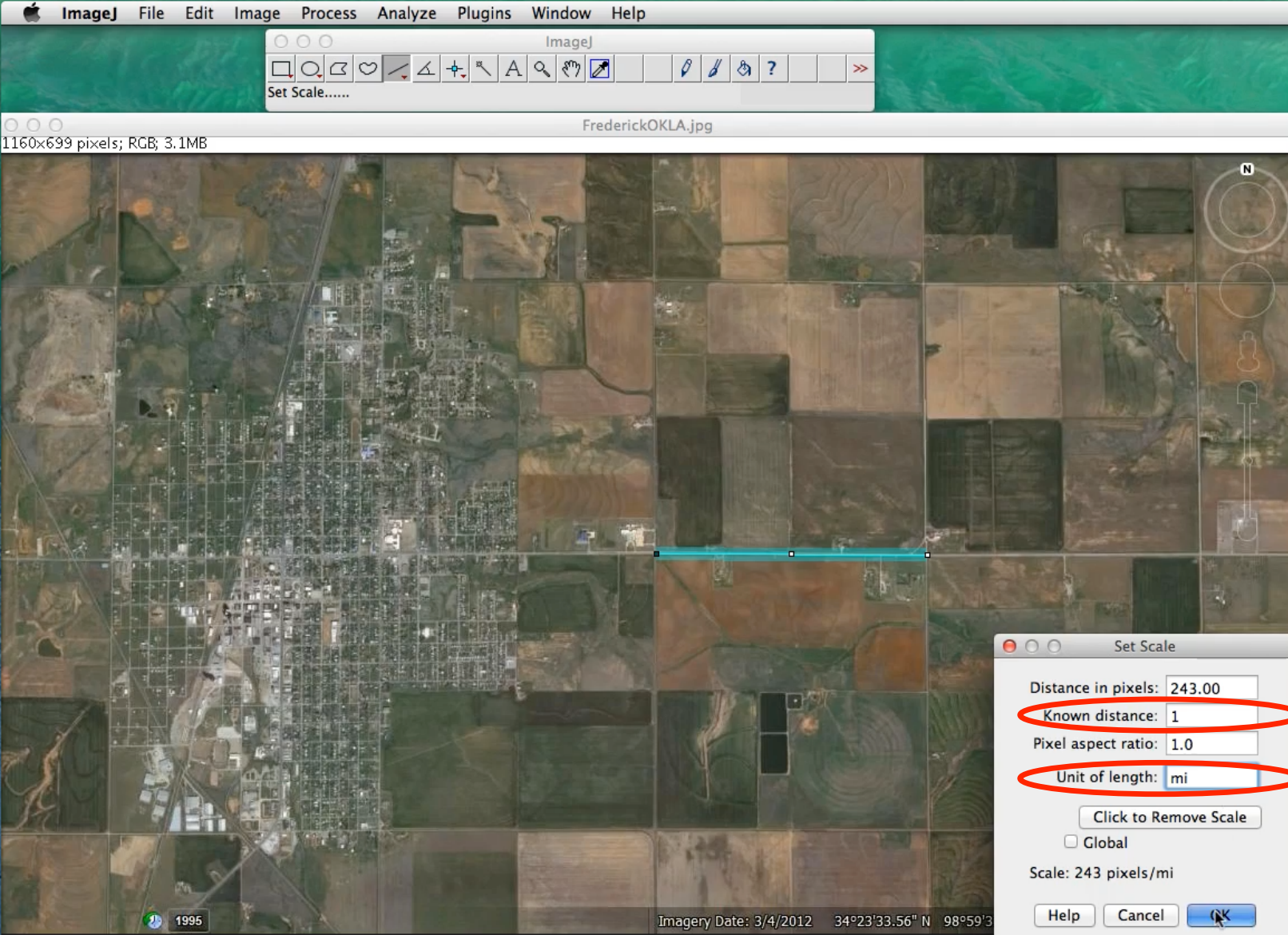


In OKLA, most of the land is gridded out into 1 mile by 1 mile sections. So draw a line on a 1 mile stretch of road and Set Scale.

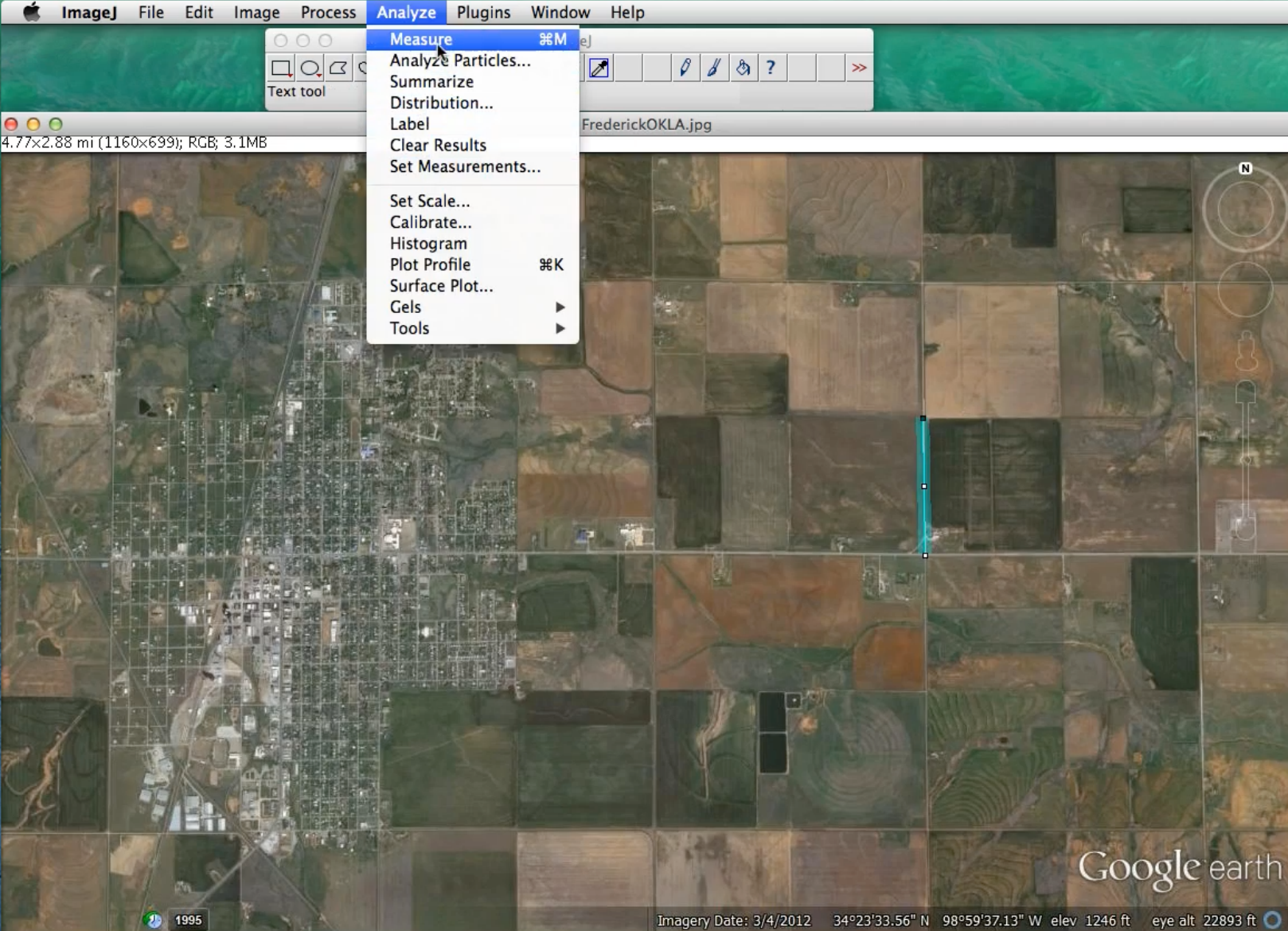


- Measure ⌘M
- Analyze Particles...
- Summarize
- Distribution...
- Label
- Clear Results
- Set Measurements...
- Set Scale...**
- Calibrate...
- Histogram
- Plot Profile ⌘K
- Surface Plot...
- Gels ▶
- Tools ▶

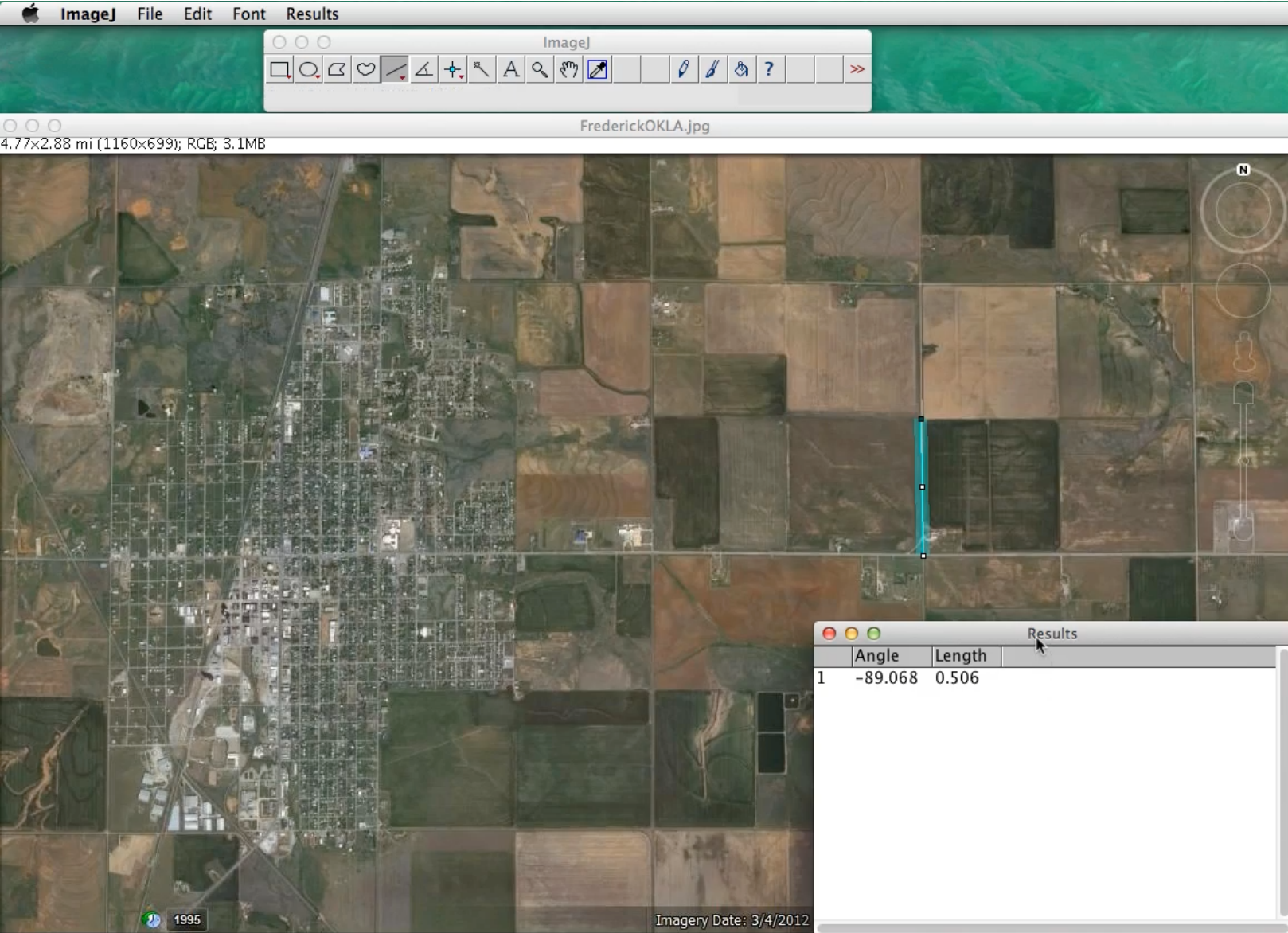
Analyze --> Set Scale.



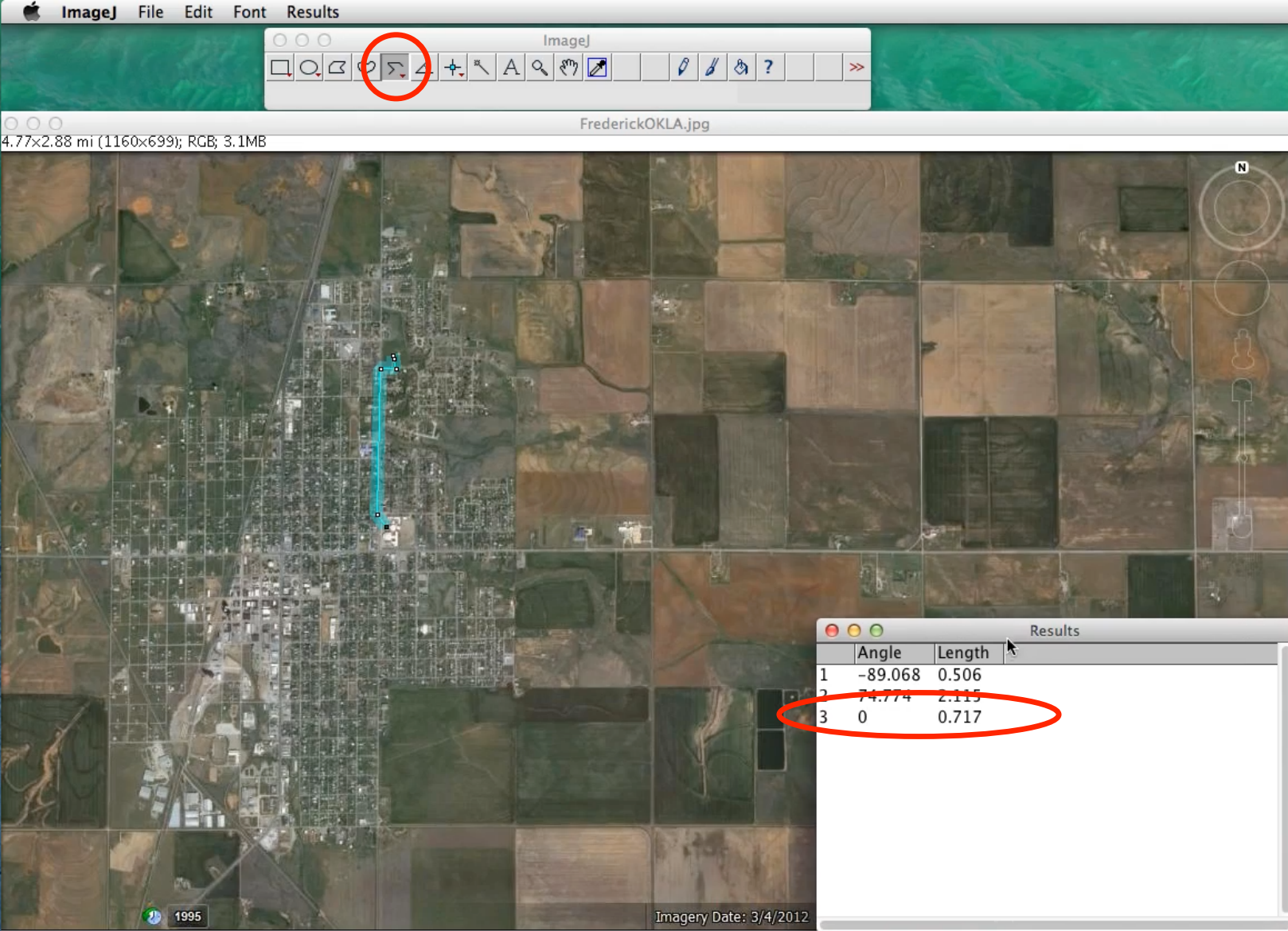
Known distance is "1" and Unit of length is "mi".



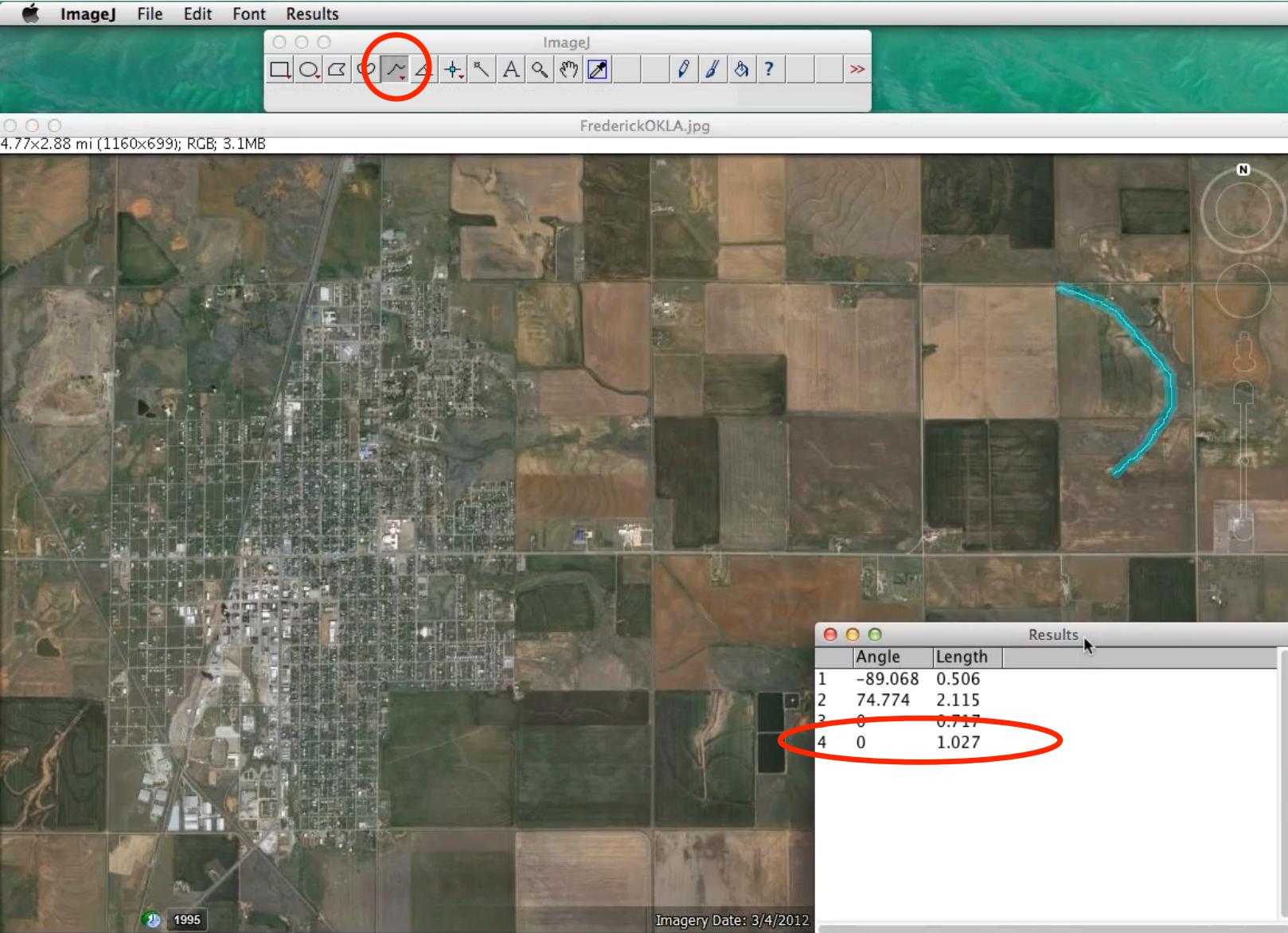
Draw a line of what should be 1/2 mile and Measure.



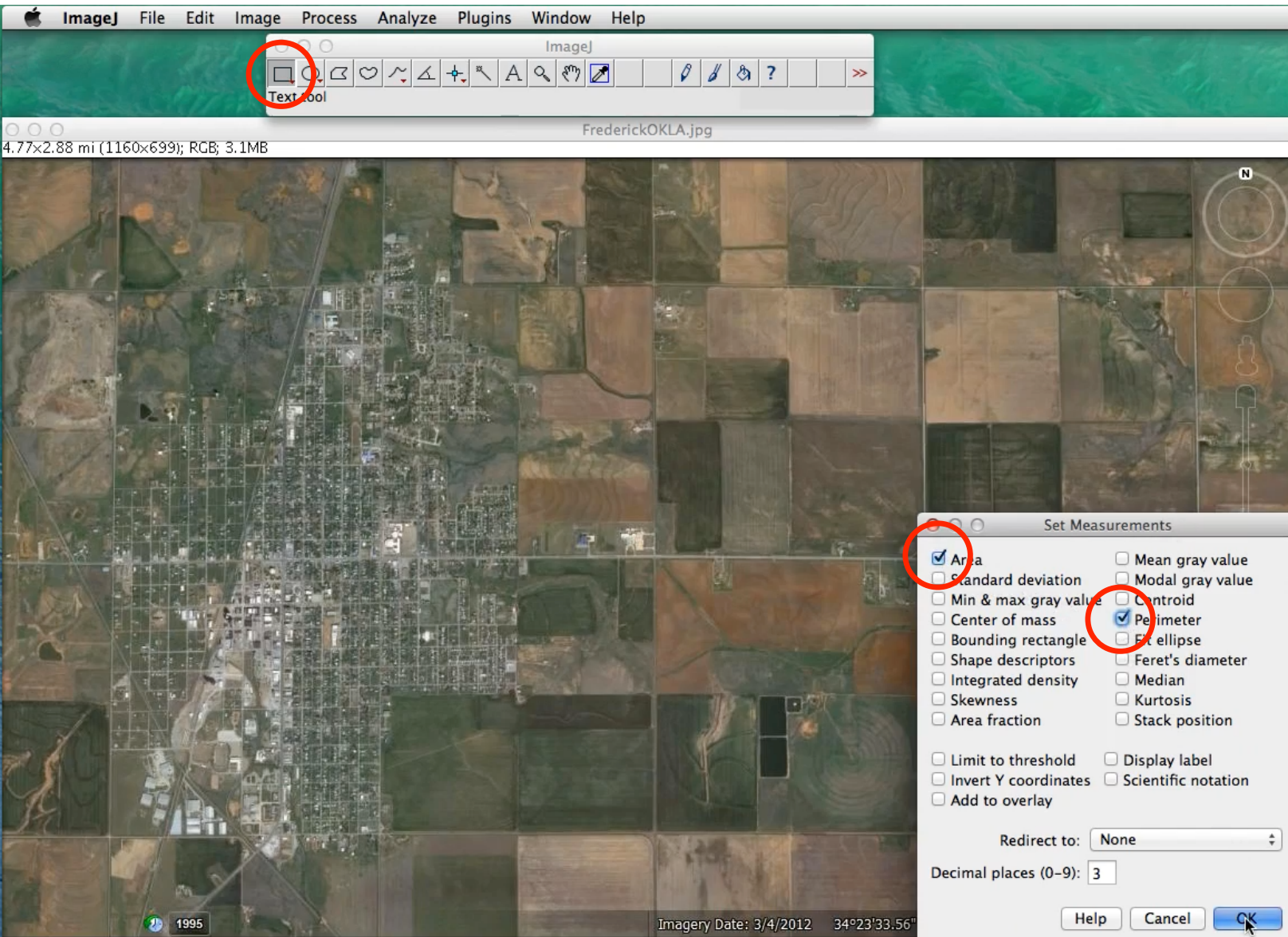
Looks like the measurement is within good agreement.



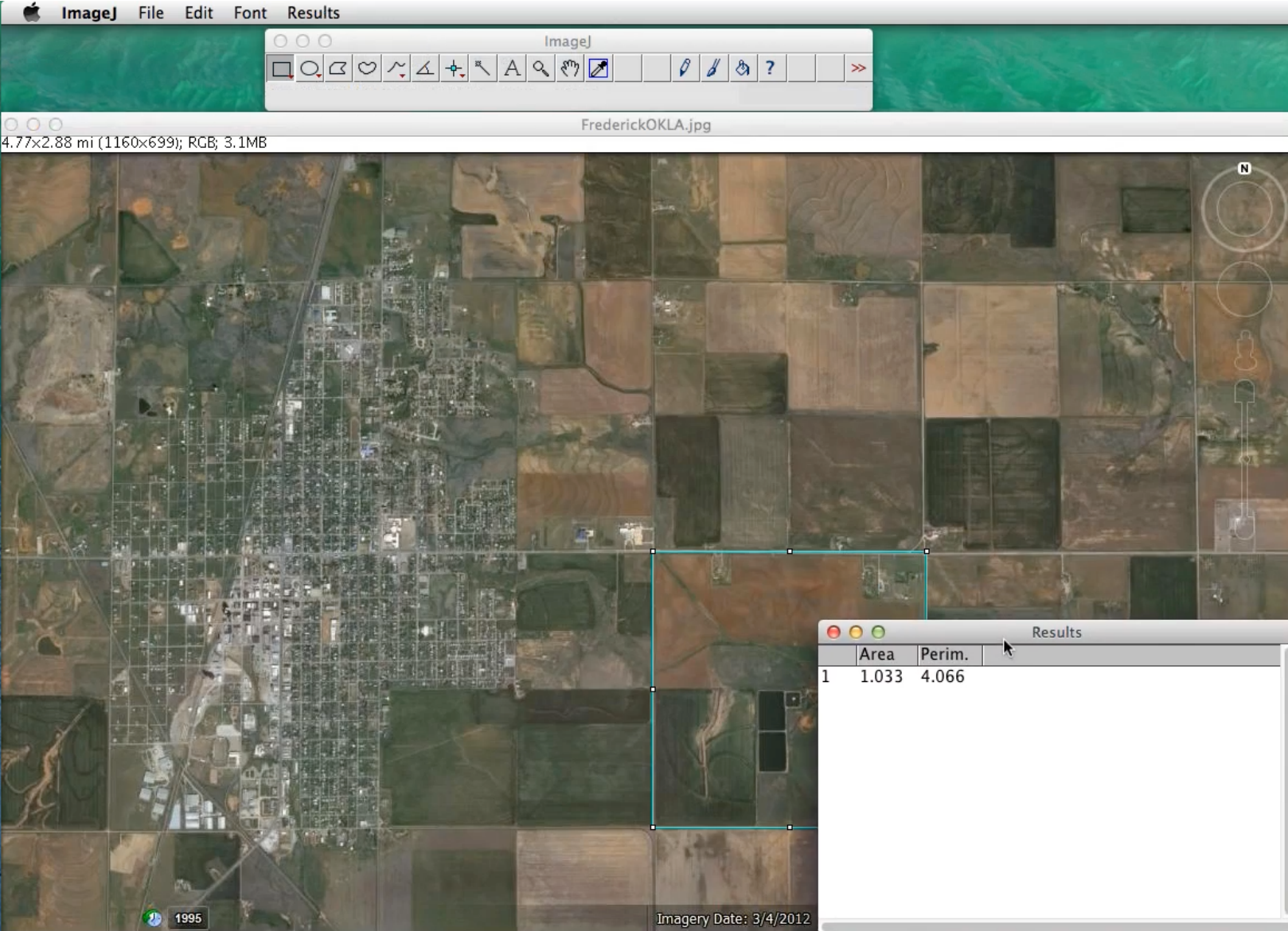
Using Segmented line, I traced the path from my high school to my house and measured it to be a little less than a mile.



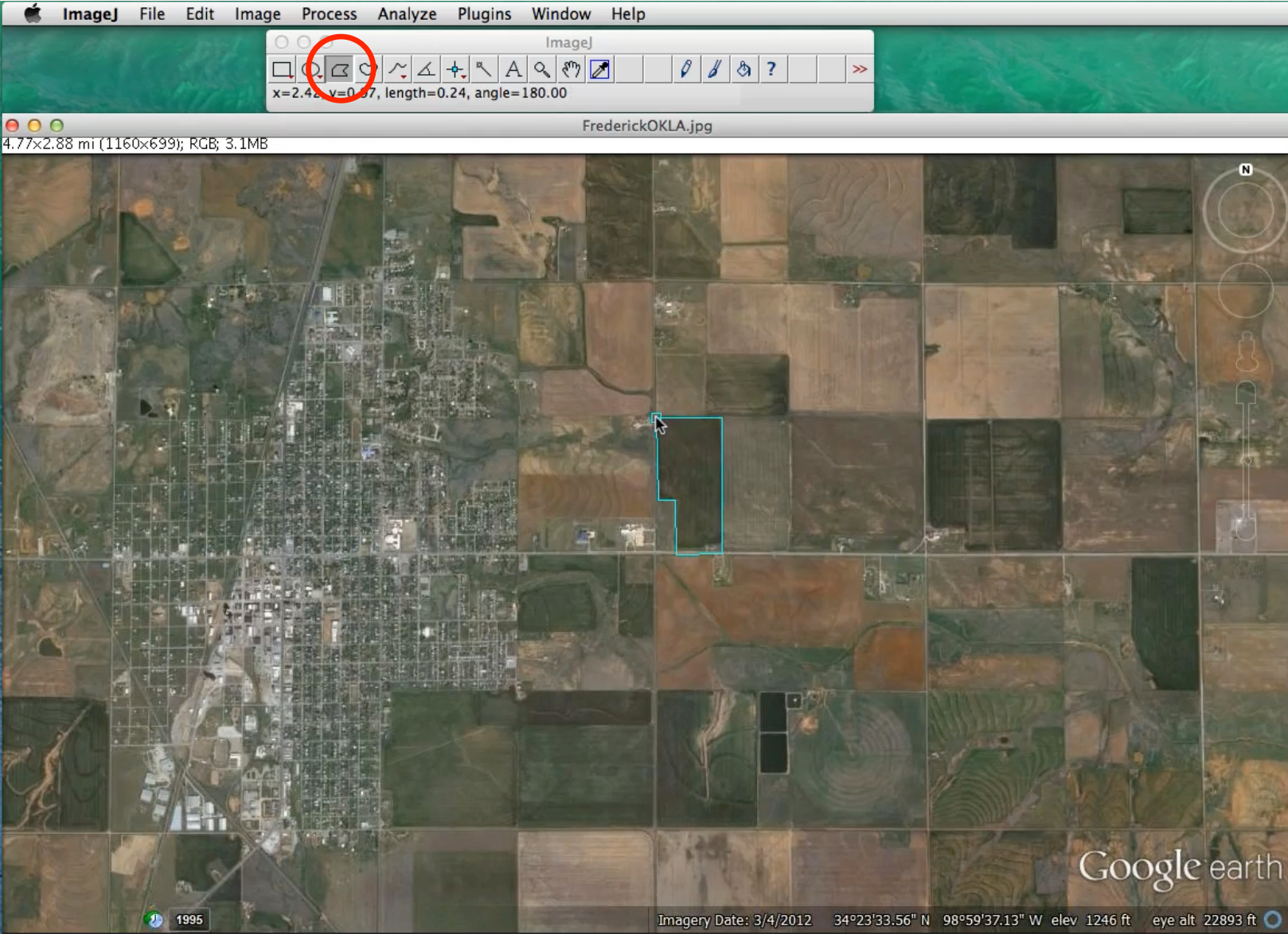
Using Freehand line, I traced what appears to be a gully and measured it.



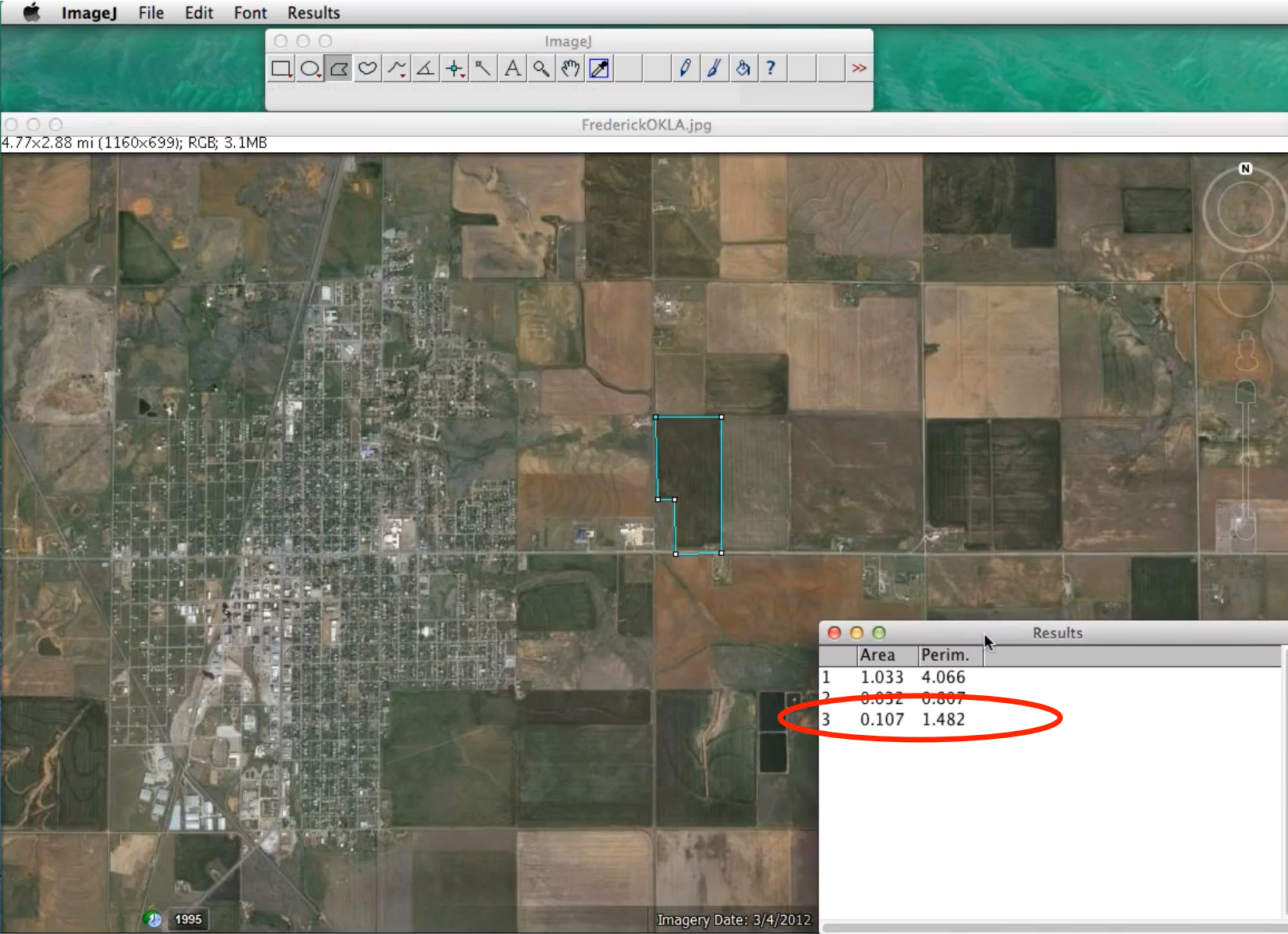
I selected the Rectangle tool icon. Then under Analyze I selected Set measurements. I wanted to display Area and Perimeter results so I put checkmarks in those boxes.



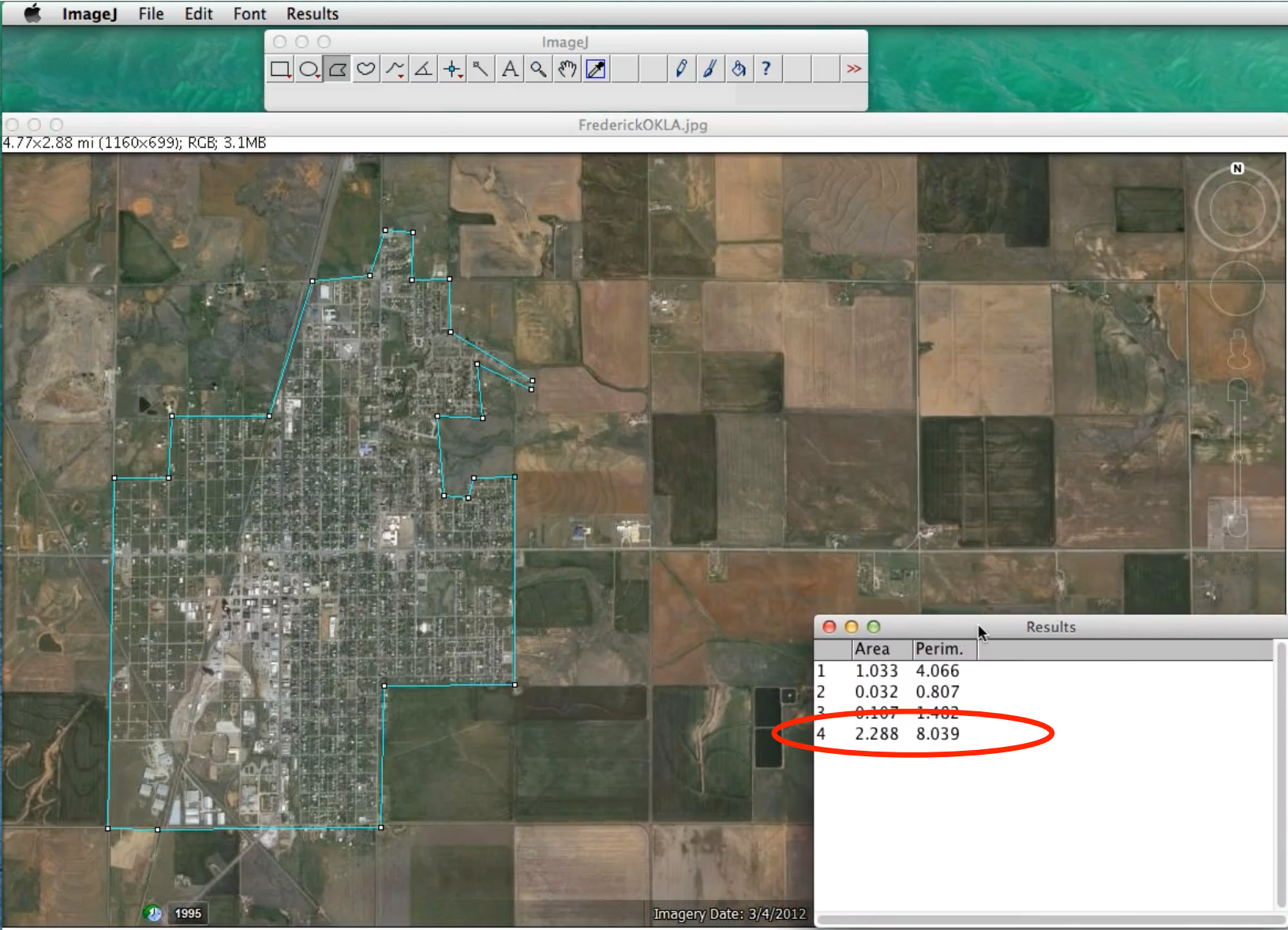
I made a rectangle fit a 1 mile by 1 mile section. You can drag and stretch the rectangle. I measured it and sure enough the area and perimeter are consistent with the expected results.



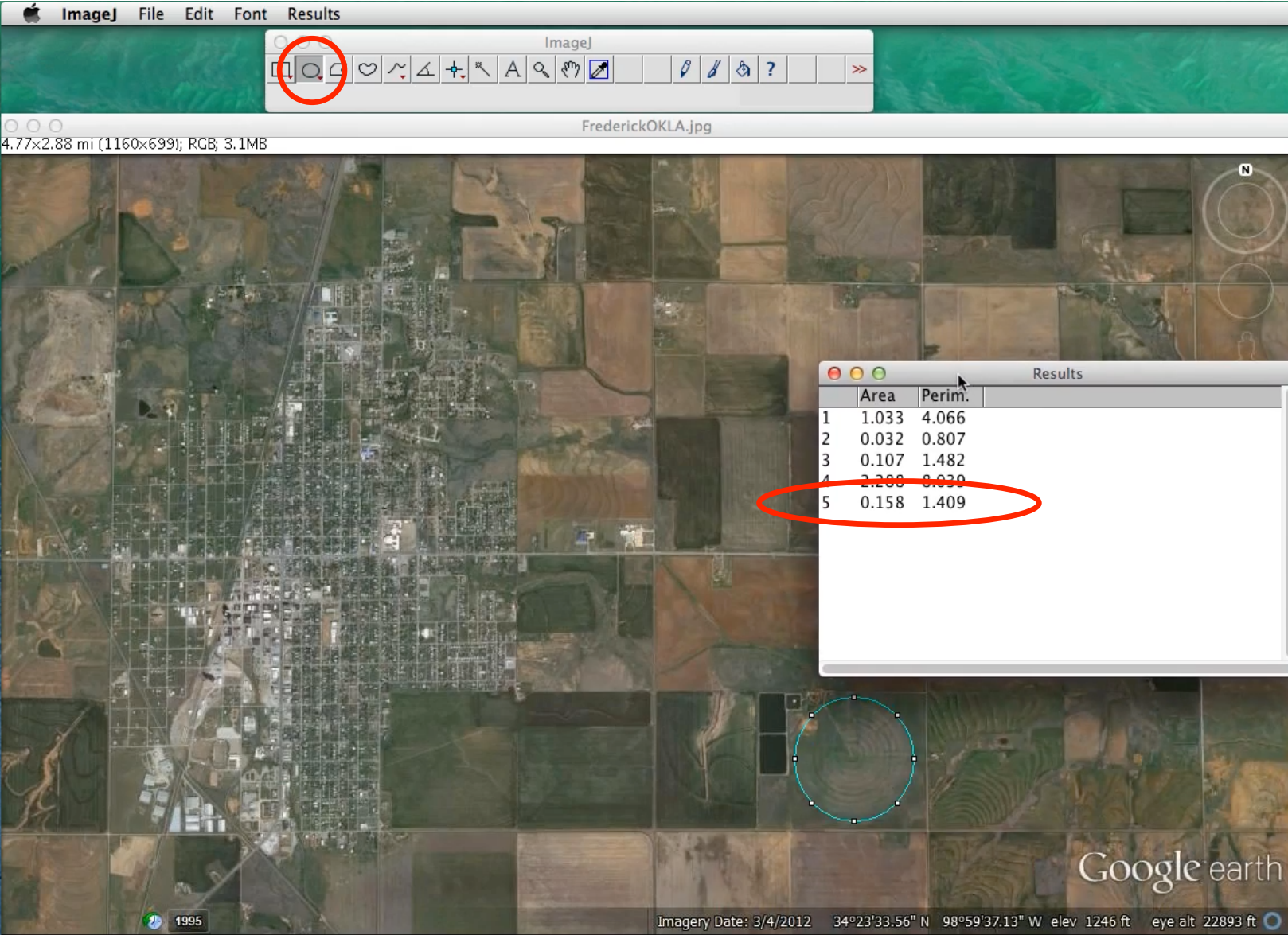
I then selected the Polygon tool and traced a cultivated section of land. Click were you want the polygon to start. Each subsequent click will define a corner. Trace all around until you get to you get back to your point of origin. Finish by clicking on your point of origin.



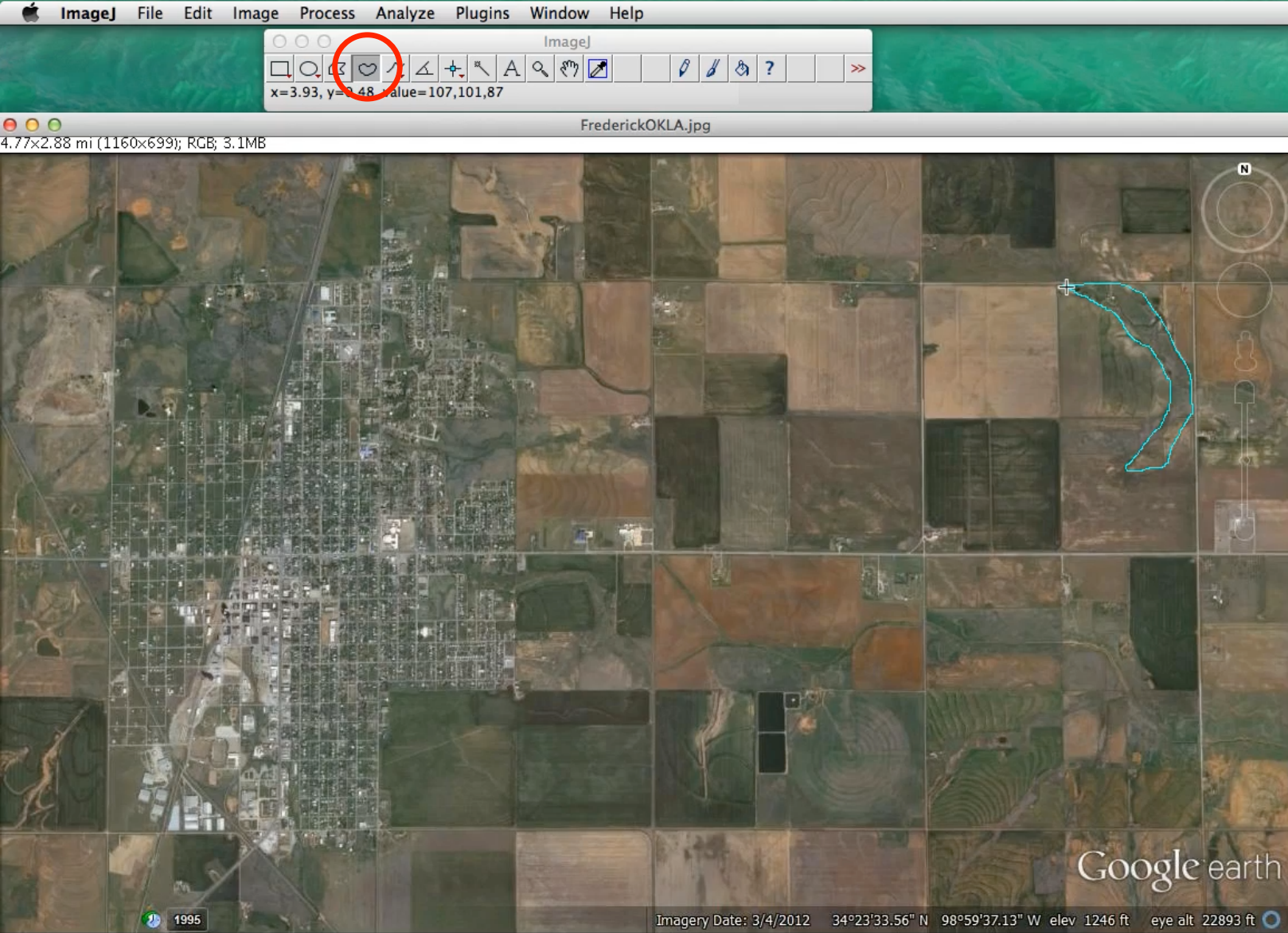
The cultivated field is measured.



A challenging polygon is to trace the borders of the city of Frederick. An educated guess was made as to what the boundaries were.



The Oval tool icon was selected. The oval was moved and stretched to match the circular cultivated field. Assuming it's close to a circle, the radius is a little less than 0.25 mile and subsequently the area = $\pi r^2 = 0.158 \text{ mi}^2$ is reasonable.



Freehand tool is selected. Click and hold your mouse at a point of origin and trace around the object while you are continuing to hold the mouse-click. Once you get back to the origin, release the mouse-click and your end will be connected to the beginning.