

GIS Graphical Lecture Notes

A Project for COSI 460


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The purpose of this project is to show students how to include graphs in GIS lecture notes.


This project uses three examples to describe how to prepare GIS lecture notes. Also, a small trial out exercise of GIS lecture notes concludes the project.


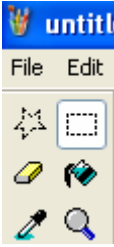

Example 1: Cutting a Small Portion of a Screen Image

You usually want to record a step to **click on Add Data button to add a shape file** after you open the GIS software program. However, you may not remember where **Add Data button** is later. Therefore, your lecture notes need graphical information to help the descriptions as below.

Click on **Add Data** button,  under the pull-down menu to add the road shape file to the ArcMap window.

But how do you get the image of  to insert it into your document? The answer is followed.

1. Press the “**Print Screen**” key from the keyboard while the target image  is on the screen.
2. Open the application software program, **Paint** by clicking **start / Programs / Accessories / Paint**.
3. Click **Edit / Paste**. You will have the last saved screen image shown on the desktop of Paint program.

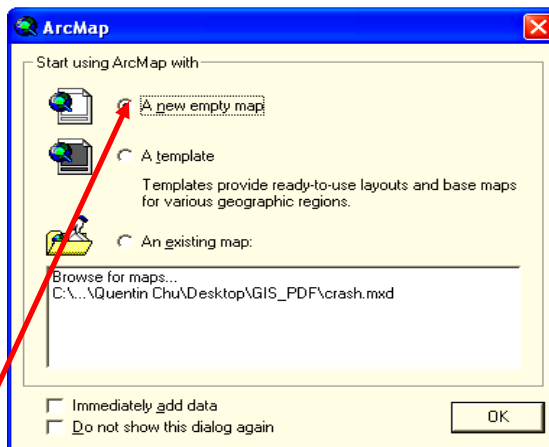
4. Click on the **Select** icon,  from the tools  of the Paint program.
5. Move your mouse and click the up-left corner of the target image  and drag down to the down-right corner of the target image. In short, **select a target image by putting a box around it**.
6. Click **Edit / Copy**.
7. Open your word document and **paste** it onto the document and resize it.

Basically, we hit the “Print Screen” key from keyboard to have a screen photo shot. The photo shot will be stored in the clipboard of computer memory. Then, you paste this image onto the desktop of the software program “Paint”. After that you select a small area of the image and copy the selected area to paste it on the Microsoft Word document.

Example 2: Cleaning Workspace and Using Drawing Tool to Identify an Item

After you have done something in the desktop of the paint program, you may want to erase it and get another image in. The way to do it is that just ask a new file from the paint program and simultaneously screen will pop out saving previous file or not. You could answer NO for it. The previous desktop image will be erased.

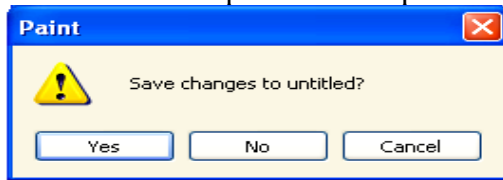
Sometimes, copy an image to your screen may not be enough for students. Adding a few arrows or circles may help students to focus on a specific area. Let us try to type the following instruction.



Create a new empty map,

Steps to get the above instruction are followed:

1. When the new image you want is on the screen, you press the “**Print Screen**” key.
2. Go to the Paint window and click **File / New** to have a new window for working on the next example. The computer will pop out a window as below.



Click No.

3. Select the area of image you want.
4. Click Edit / Copy.
5. Go to Word document and paste it.

6. Turn on drawing tools



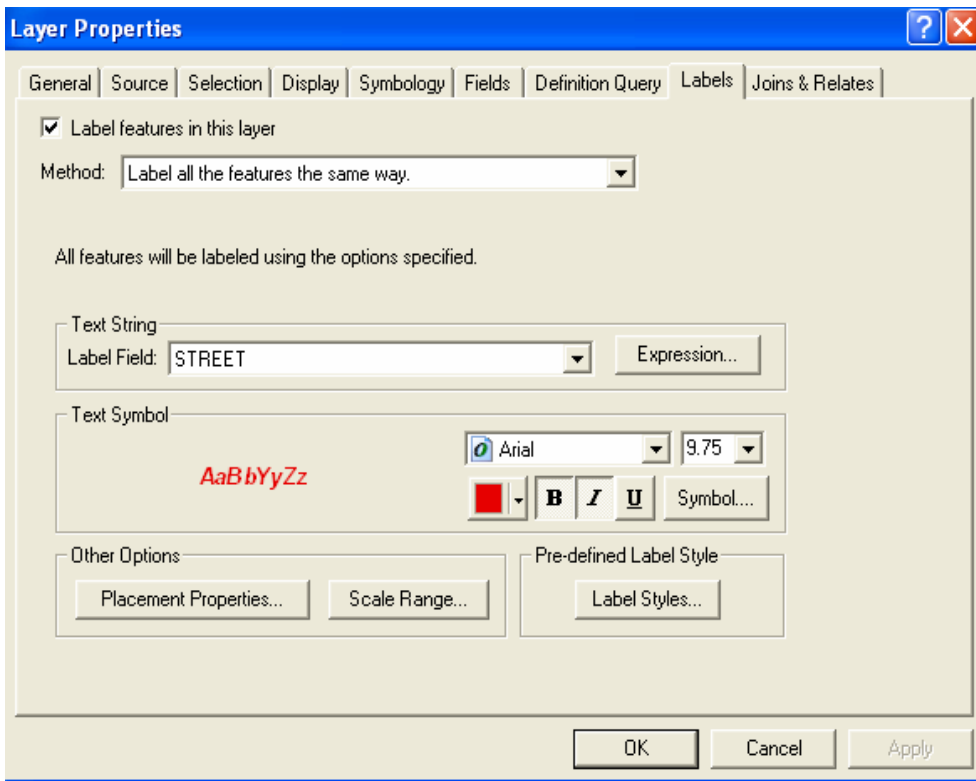
by clicking **Drawing** if needed.

7. **Draw an arrow** to show students where a special place of the image is.

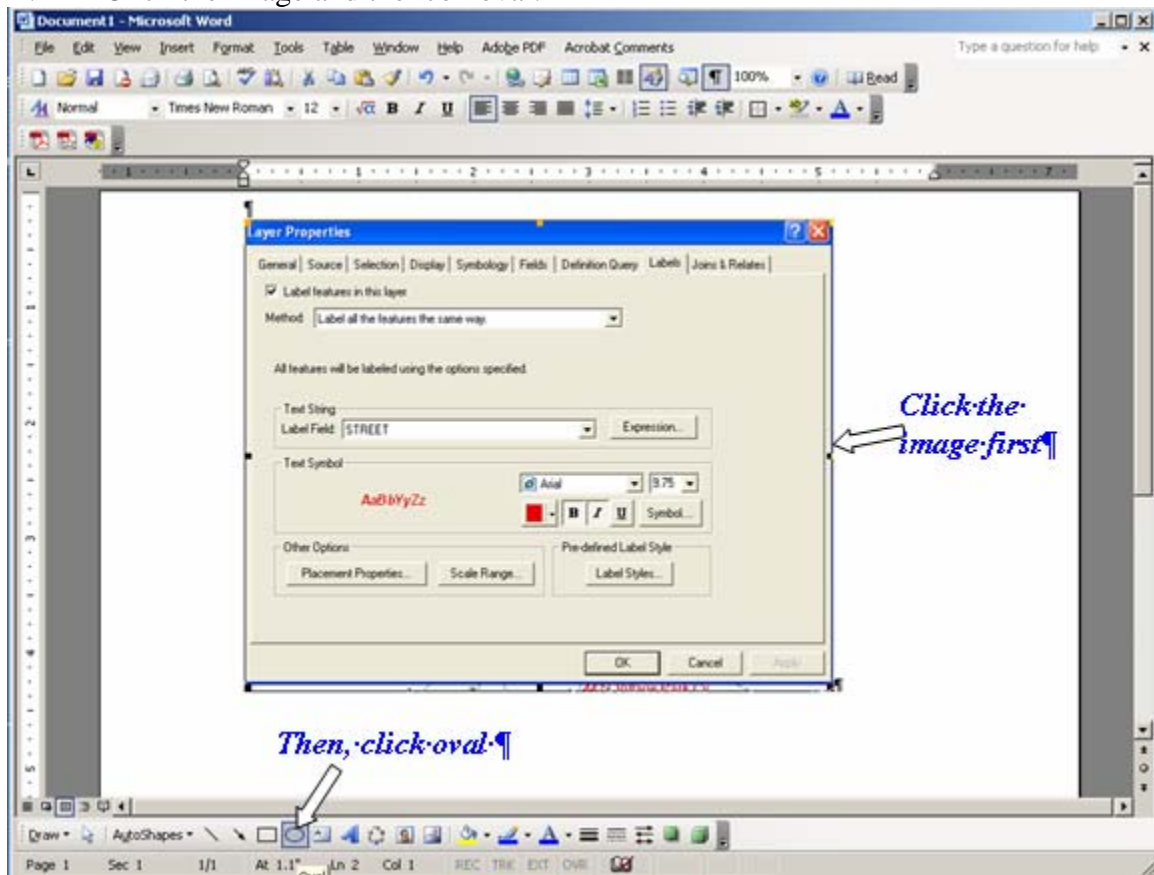
In general, there is **only one window** of software Paint to be open each time. It is a working space to select a small image from a larger image file. Therefore, we always ask a new file and simultaneously close previous file without saving it. In addition to pasting an image, we can draw arrows to emphasize the point to look.

Example 3: Using Drawing Tools to Make a Circle around Items

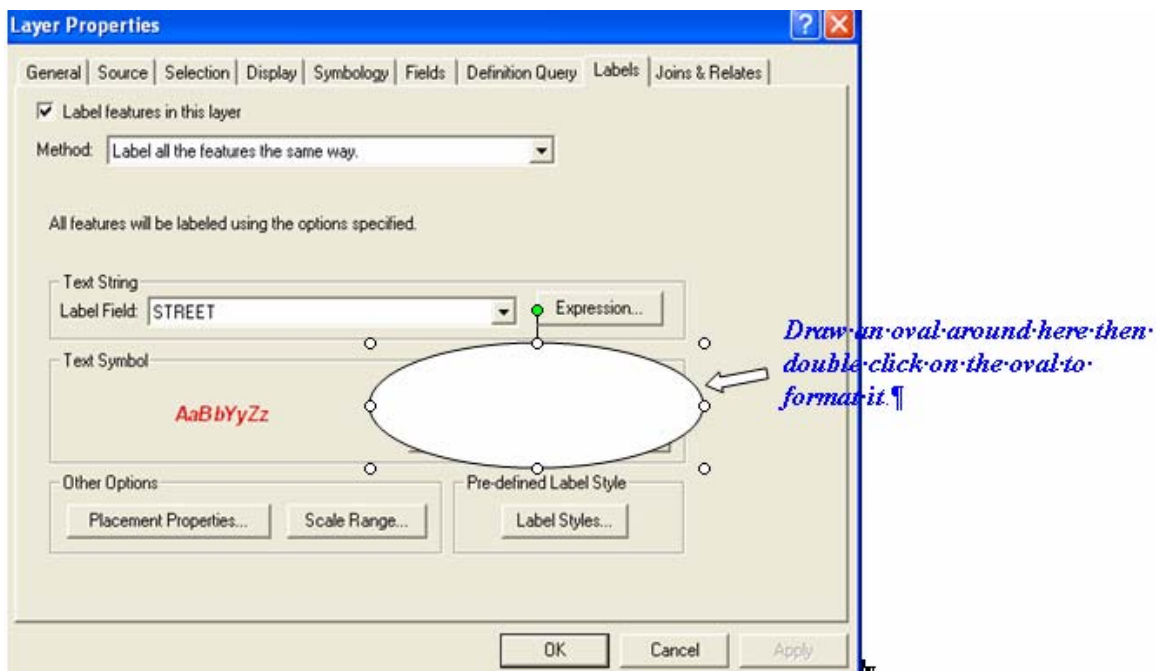
I. Copy and paste the following image in the word document



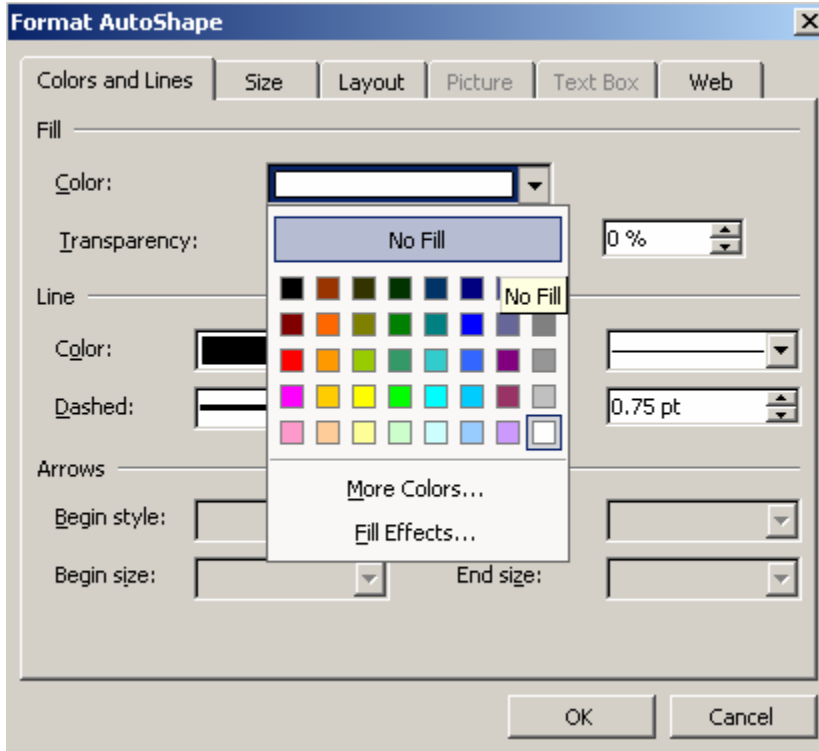
II. Click the image and the icon oval.



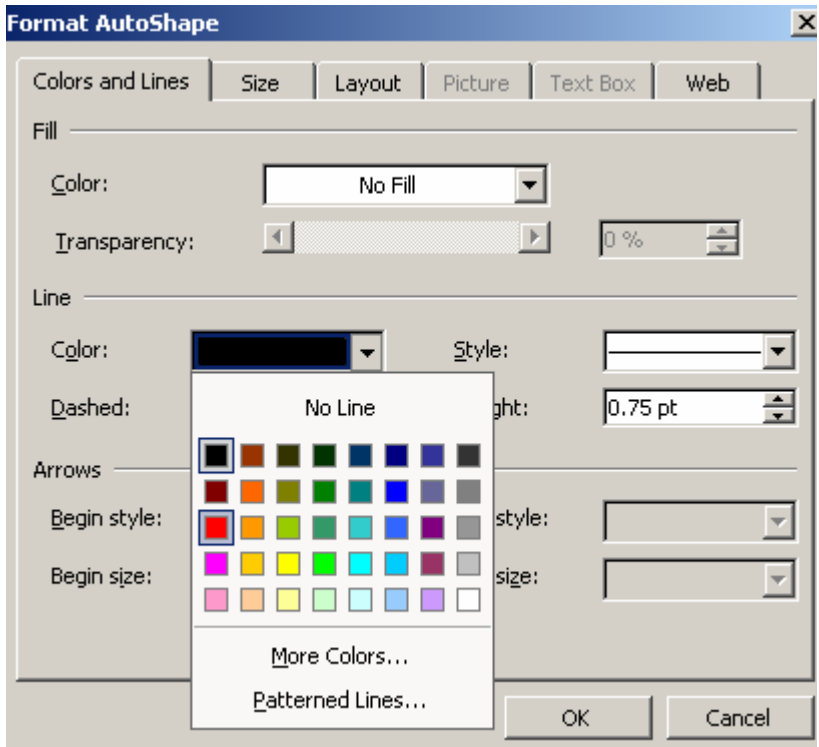
III. Move the mouse and draw an oval on the top of items as below.



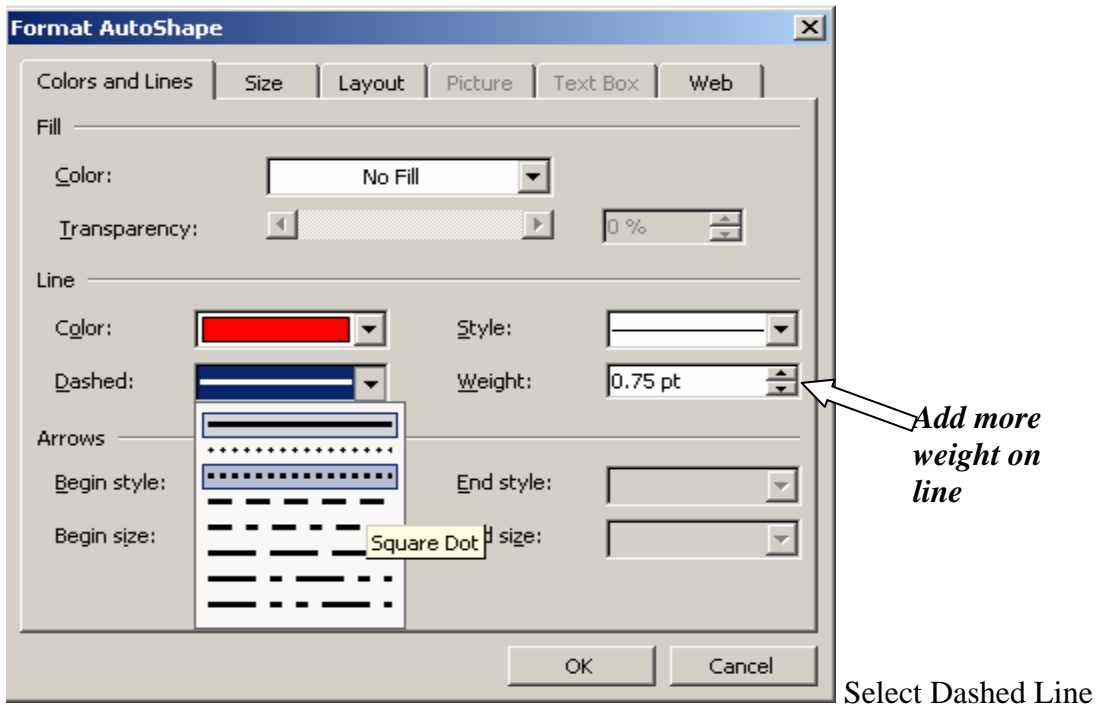
IV. After you double click on the oval, there is formatting window popped out.



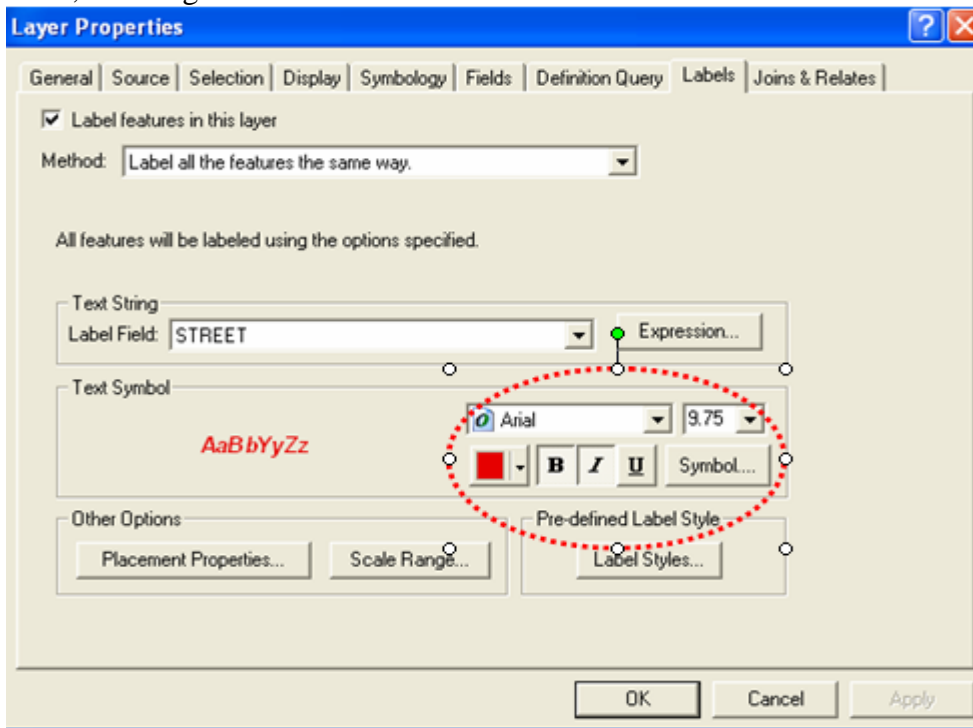
Select **No Fill**.



Select color for Line



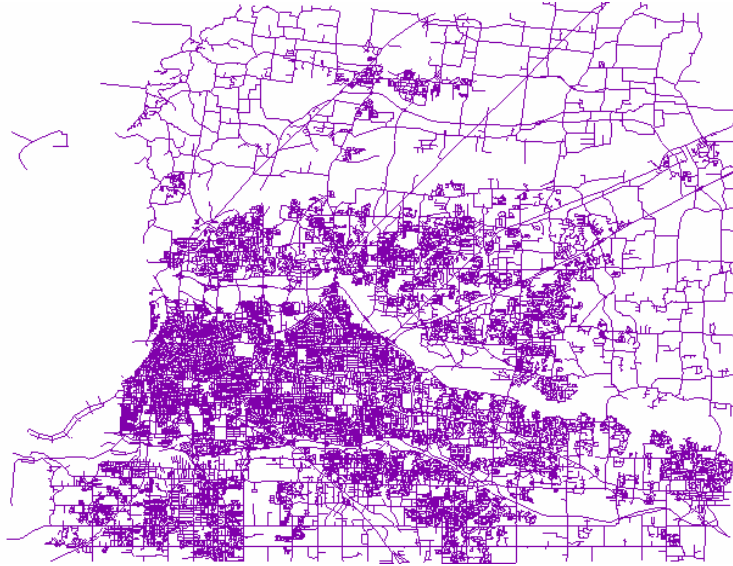
Then, the image will be circled.



Finally, this project includes a handout of creating a map of Shelby County with major roads. It is a good exercise for you to duplicate it and test themselves the skills of making graphical instructions.

Creating a Map of Shelby County with Major Roads

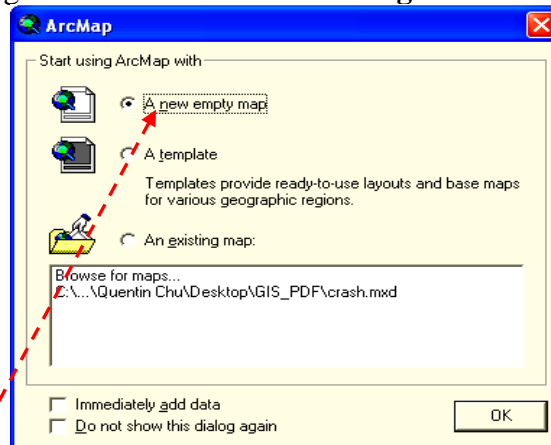
When someone creates a Shelby County map, it is often very messy as the map below.



Therefore, we need to look at the attribute table and identify the code for the major roads. Then use select by attribute property to select major road and display them in a new layer of the map.


You may follow the steps below to complete this task.

1. Open **ArcMap** by clicking on **start** button and then **Programs/ArcGIS/ArcMap**.



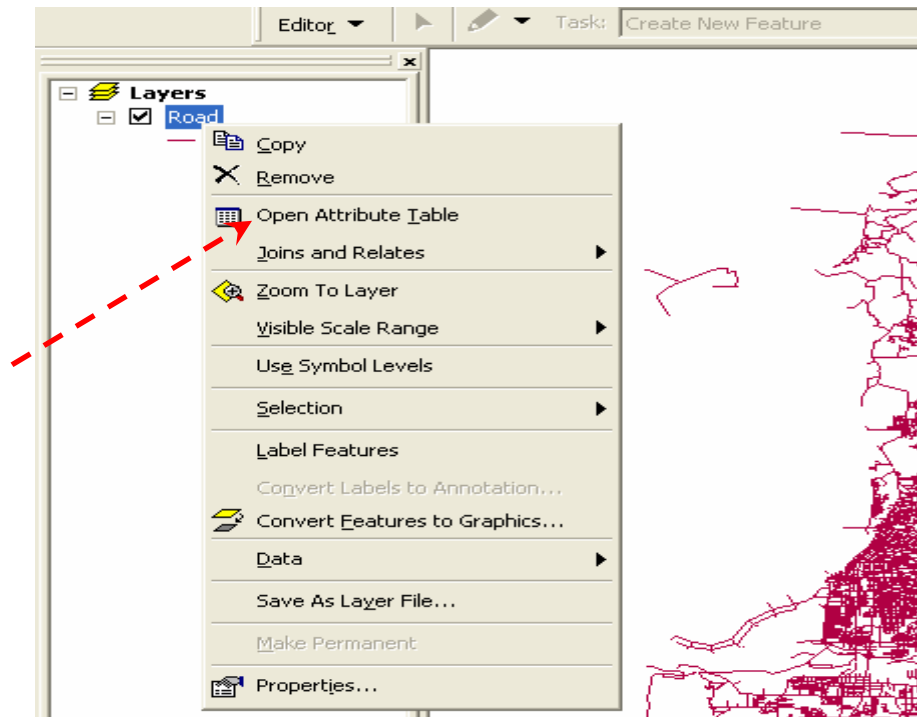
2. Create a new empty map.

Click **OK**

3. Click on **Add Data** button,  under the pull-down menu to add the road shape file to the ArcMap window.

4. Display some selected roads by following steps:

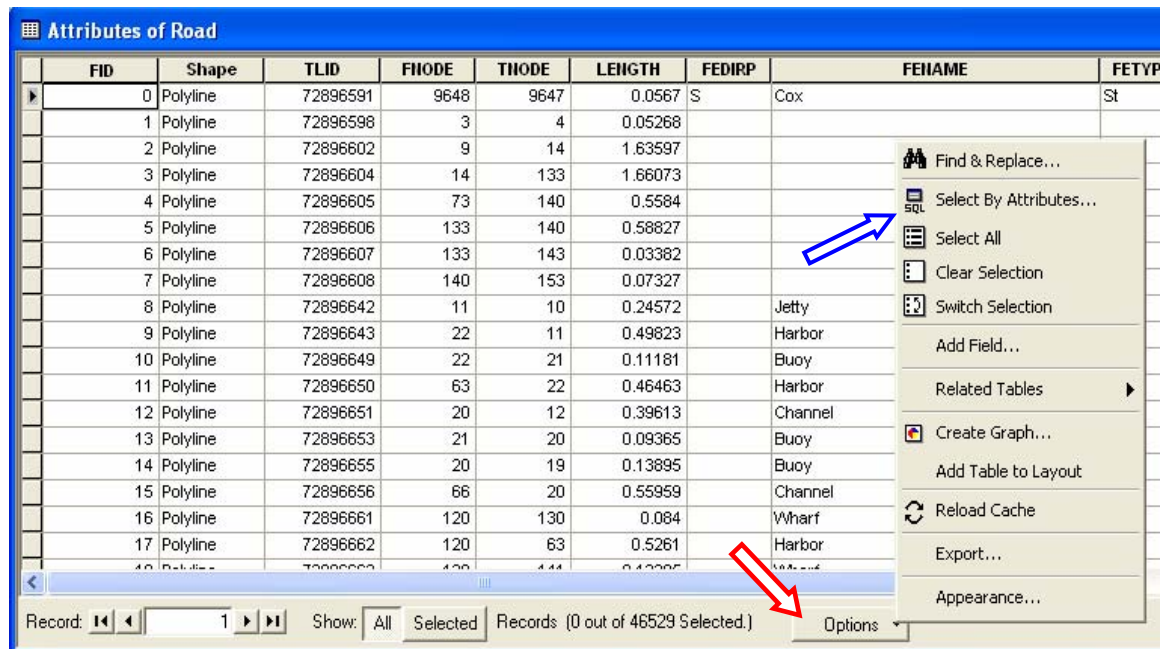
a. Right click on the Road layer of catalog tree (left box).



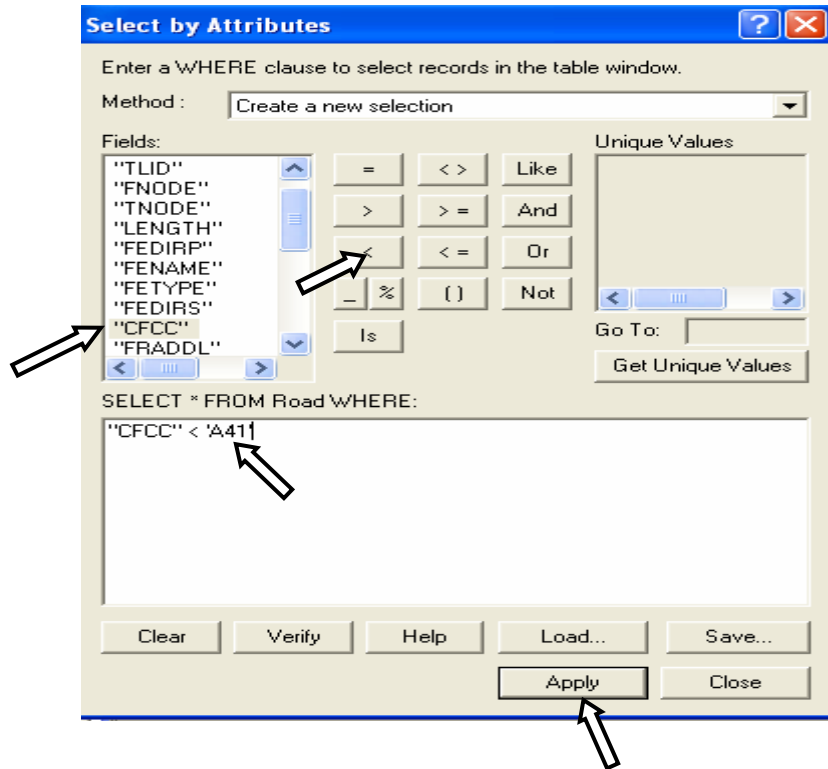
b. Click “Open Attribute Table”

c. Click on “Options”

d. Click on “Select By Attribute”

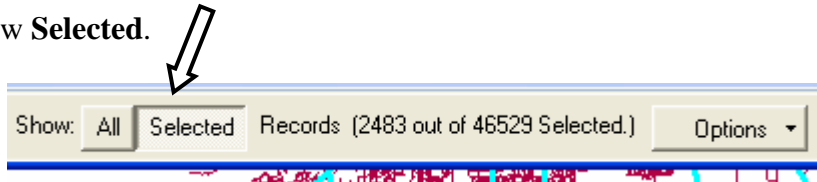


e. Double click on “CFCC” and click < sign from window, then type ‘A41’.



f. Click **Apply**.

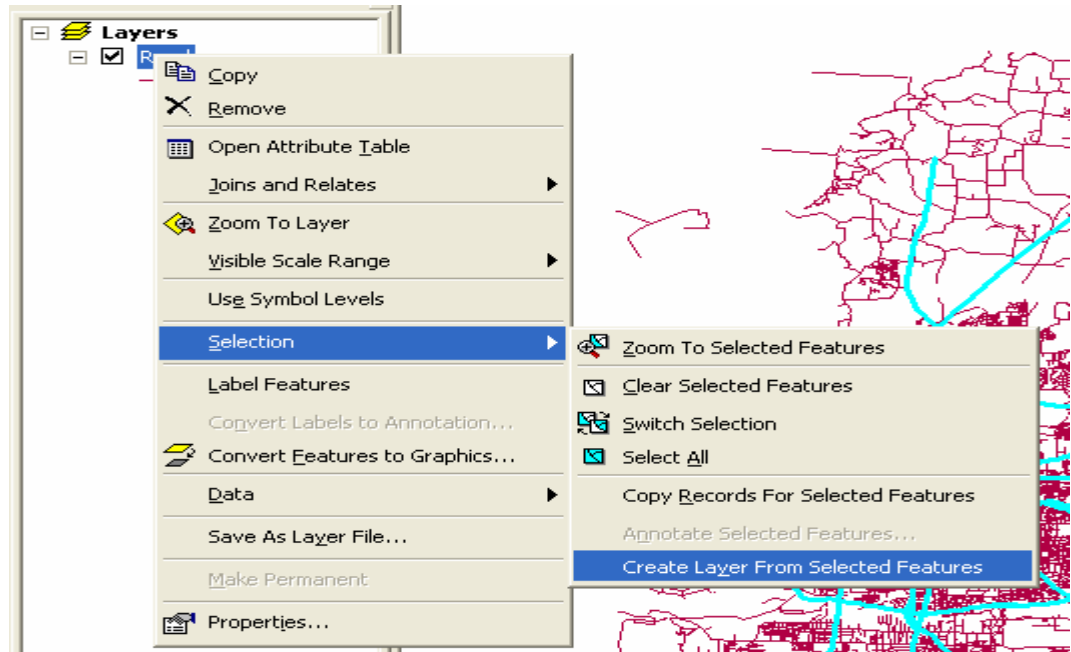
g. Show **Selected**.



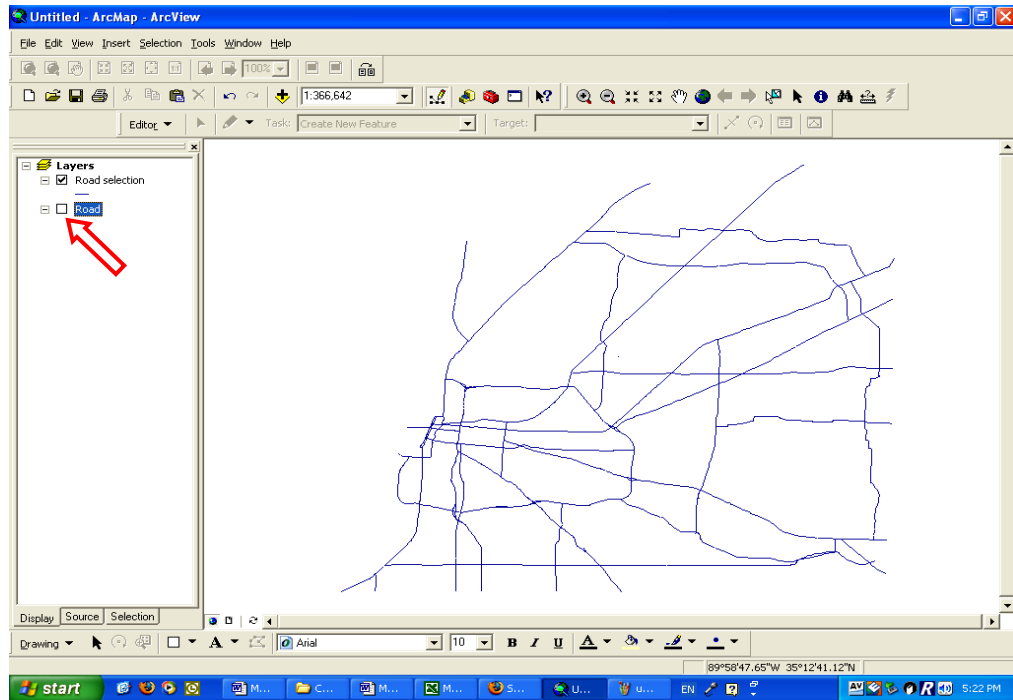
h. Close the attribute table.

i. Right click on Road layer again

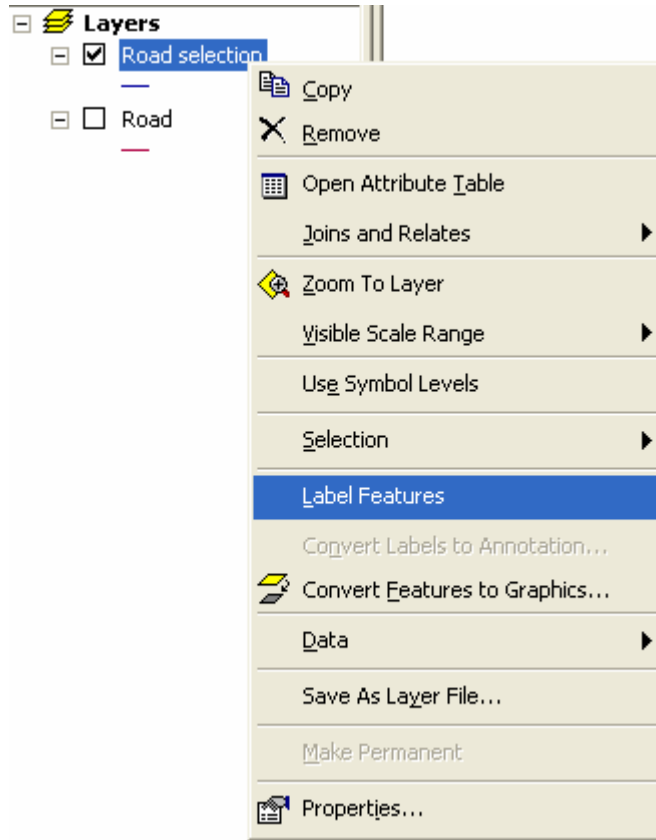
j. Click on **Selection / Create layer from selected feature**.



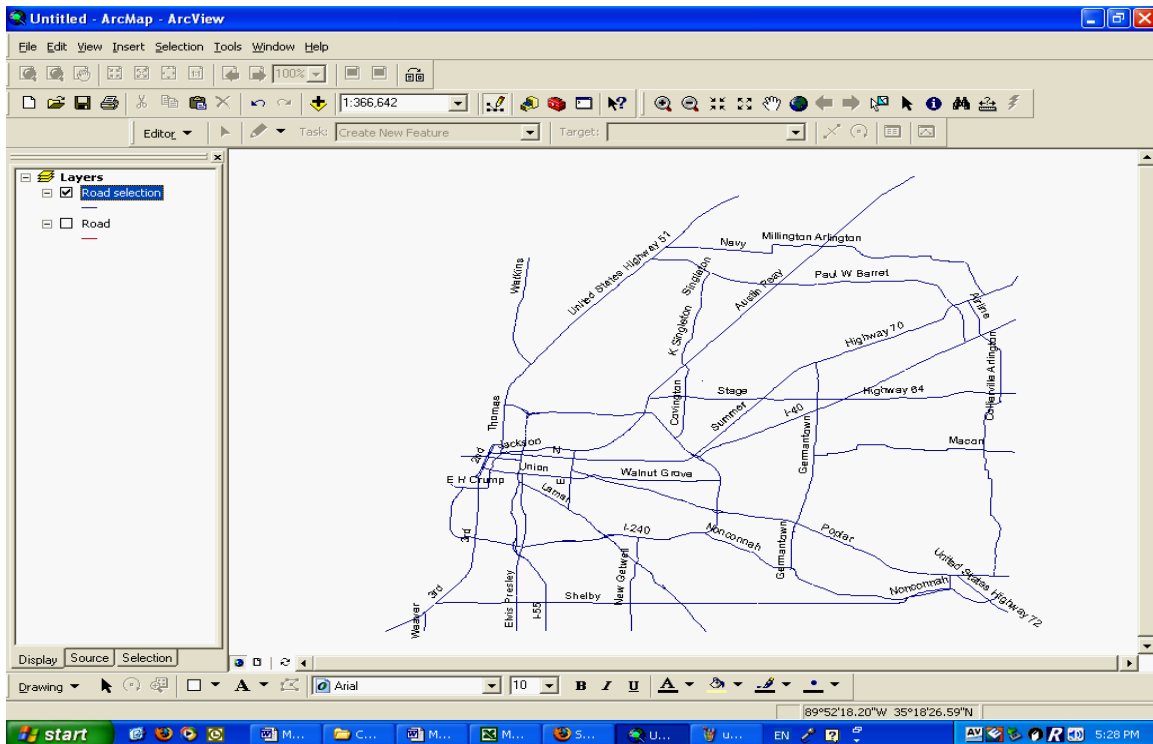
k. **Unclick Road layer.** The map will show only a few streets.



1. Label the streets.



The names of streets will be shown on the map as below.



In addition, someone can **right-click** on Road selection layer / **Properties** / **Labels** to change the label's format.

