2 Introduction of ArcCatalog

ArcCatalog is the tool such as Microsoft Explorer for browsing, organizing and documenting organization's GIS data holdings.
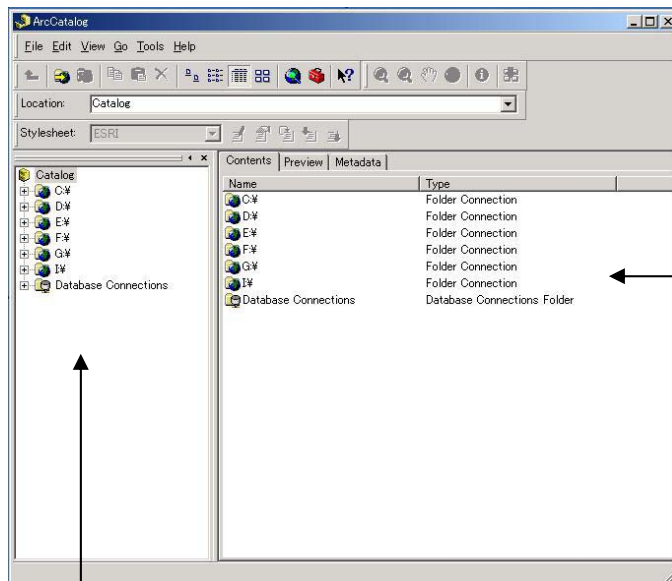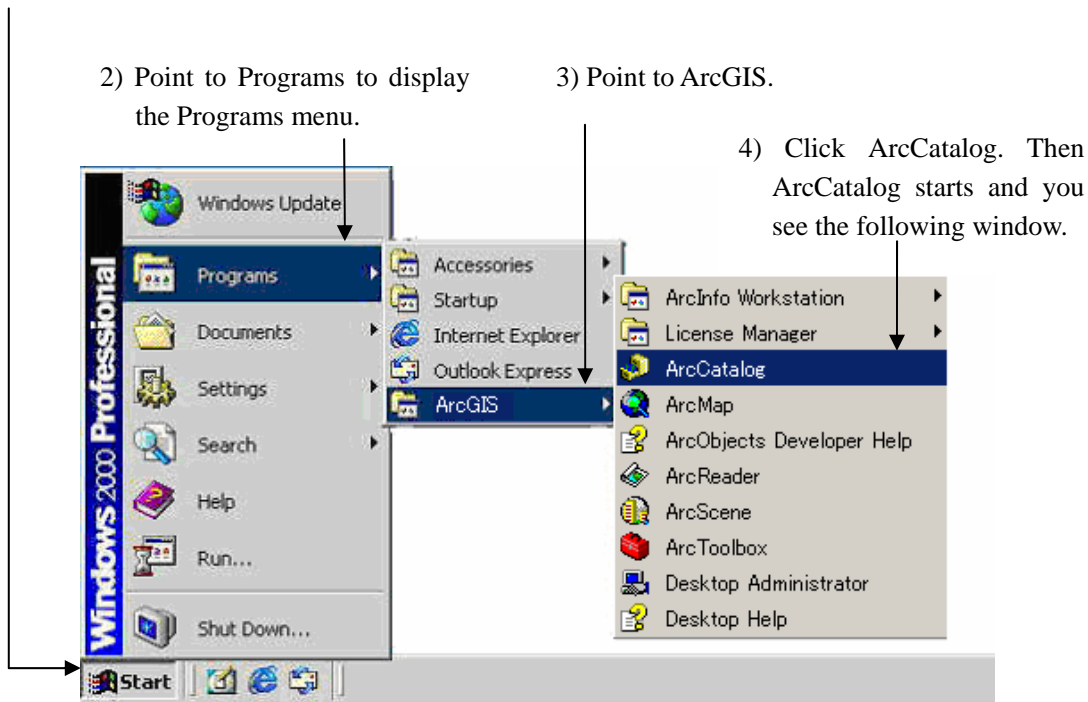
2.1 Starting and Exiting ArcCatalog
2.1.1 How to Start ArcCatalog

1) Click the Start button on the taskbar.

2) Point to Programs to display the Programs menu.

3) Point to ArcGIS.

4) Click ArcCatalog. Then ArcCatalog starts and you see the following window.
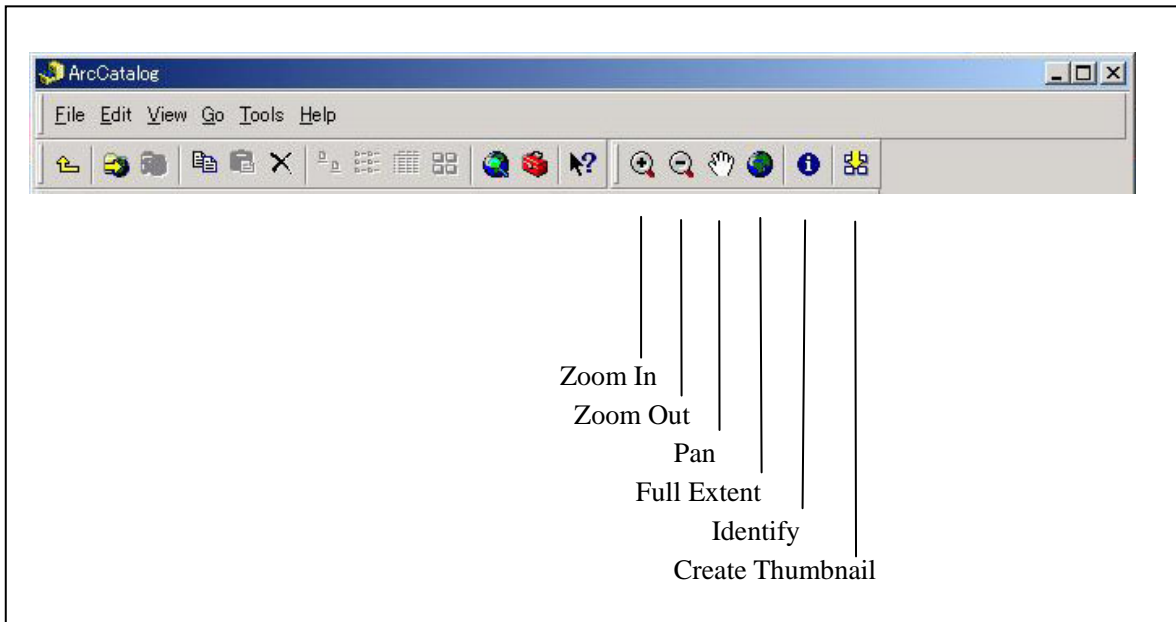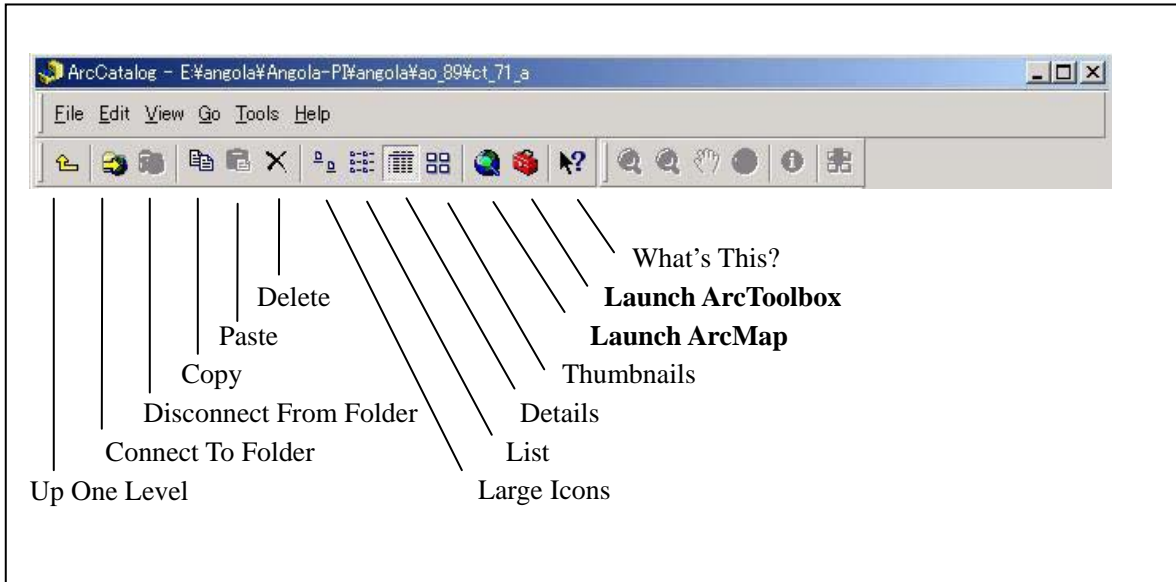

The contents of the current branch are displayed on the right side of the ArcCatalog window.

The Catalog tree on the left side of the ArcCatalog window is for browsing and organizing your GIS data.

When you start ArcCatalog for the first time, you may see branches for each local hard drive, a branch for database, etc. As you can use ArcCatalog like Microsoft Explorer, you can view the contents of a branch by double-clicking it or by clicking the plus sign beside it.
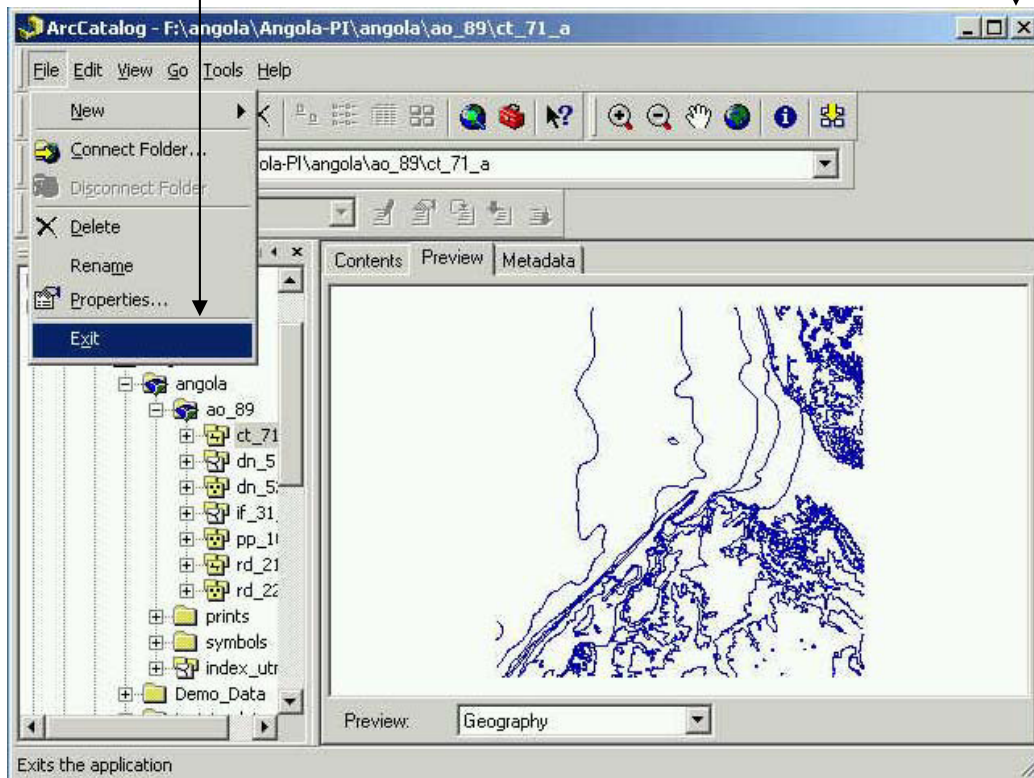
Functions of Toolbars buttons are the followings:

What's This?
Launch ArcToolbox
Launch ArcMap
Thumbnails
Delete
Paste
Details
Copy
List
Disconnect From Folder
Connect To Folder
Large Icons
Up One Level

Zoom In
Zoom Out
Pan
Full Extent
Identify
Create Thumbnail

Note: Please see Page 12 for operation examples of Zoom In and Identify.

2.1.2 How to Exit ArcCatalog

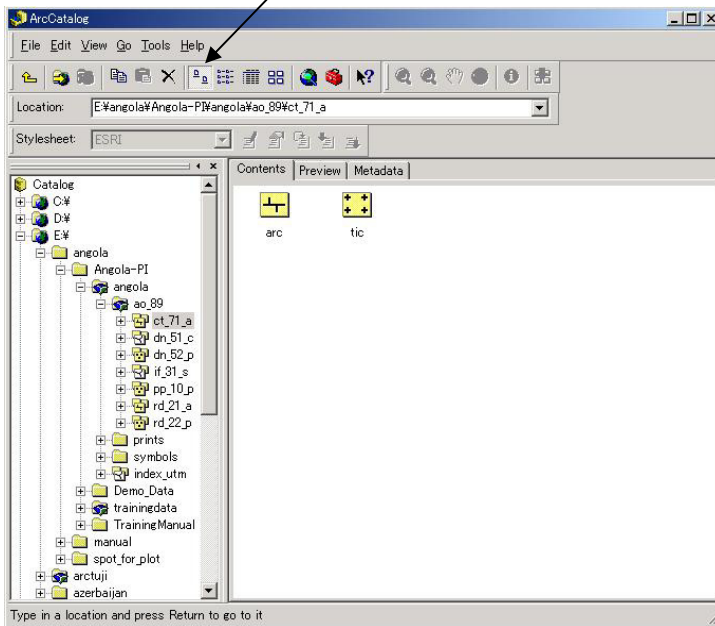There are two ways for exiting ArcCatalog. Click File and click Exit or only click the Close button.

2.2 How to View Data in ArcCatalog

On the right side of the ArcCatalog window you can view a data source in the three ways - Contents, Preview and Metadata.
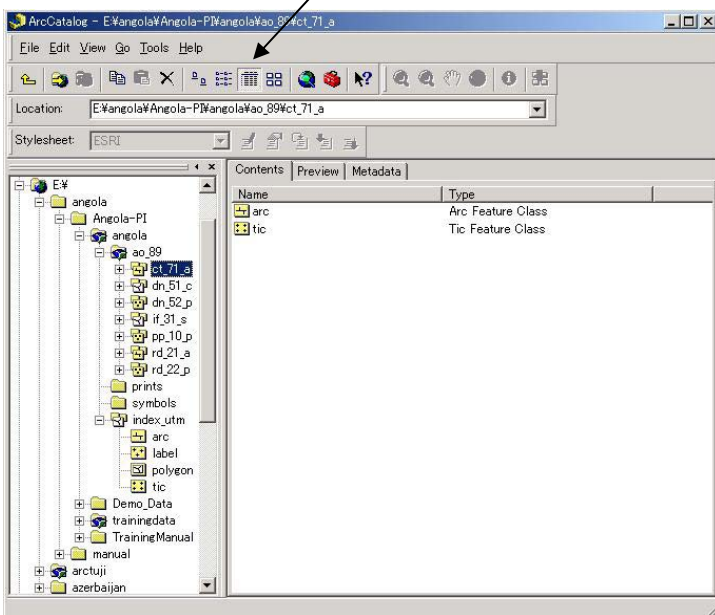
Example 1 of Contents view:
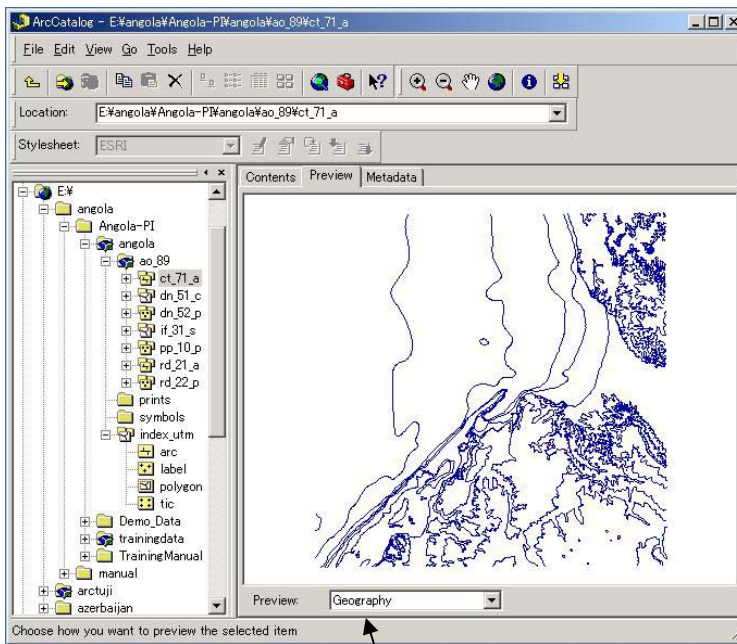
Click the Large Icons button

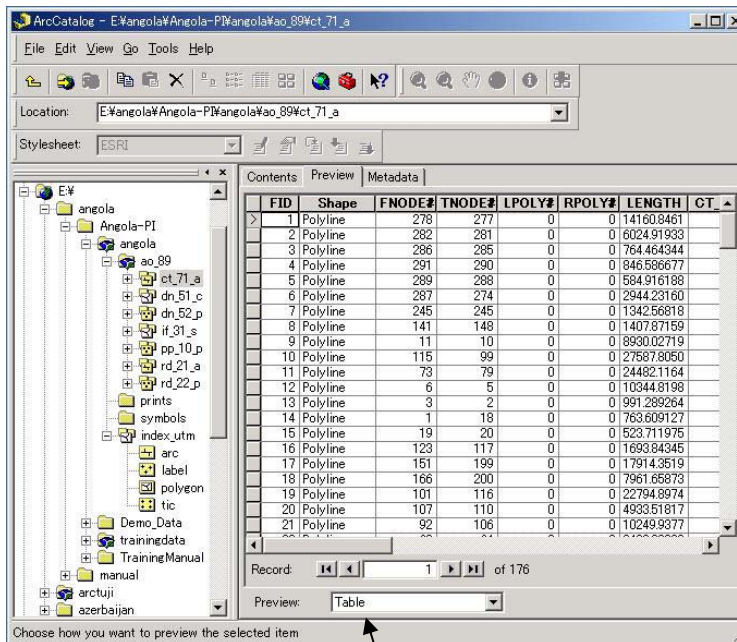**Example 2 of Contents view:**

Click the Details button

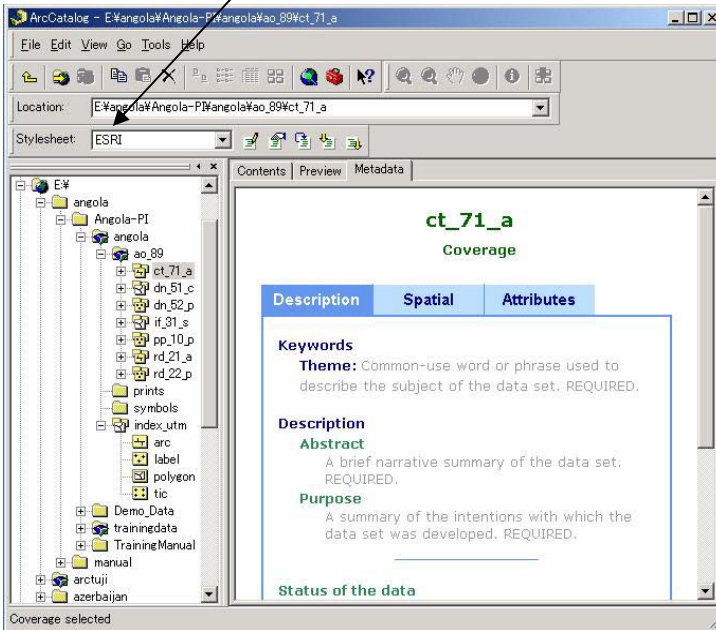**Example 1 of Preview view:**

Select the Geography option

Example 2 of Preview view:
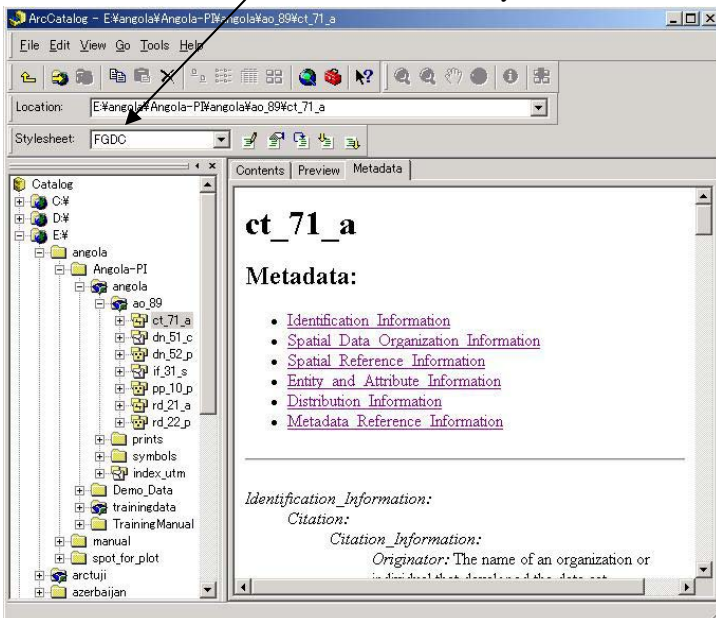

Select the Table option

Example 1 of Metadata view:

Select the ESRI Stylesheet

Example 2 of Metadata view:

Select the FGDS Stylesheet

3 Introduction of ArcMap

ArcMap is the tool for creating, viewing, querying, editing, composing and publishing maps.
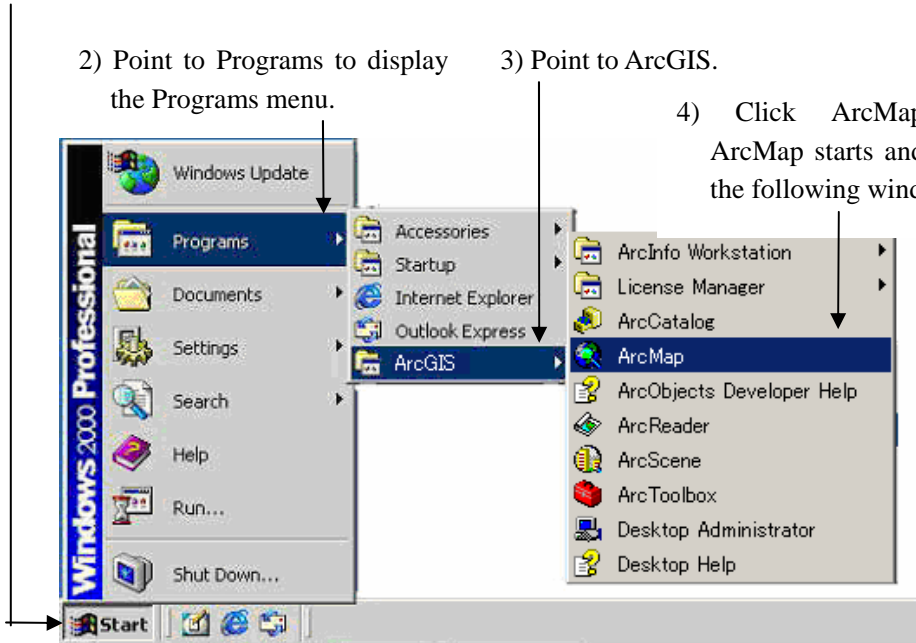
3.1 Starting and Exiting ArcMap
3.1.1 How to Start ArcMap

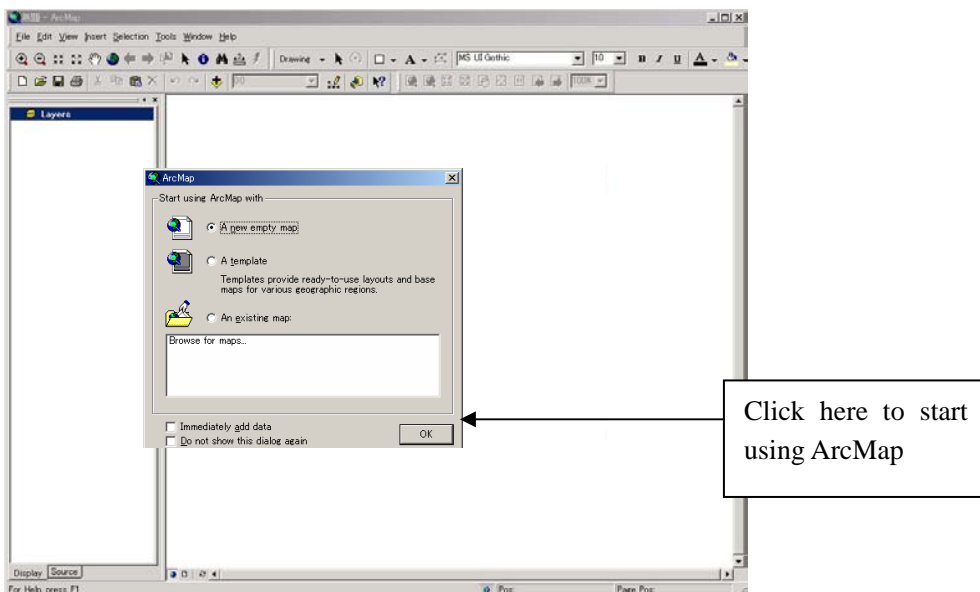1) Click the Start button on the taskbar.

2) Point to Programs to display the Programs menu.

3) Point to ArcGIS.

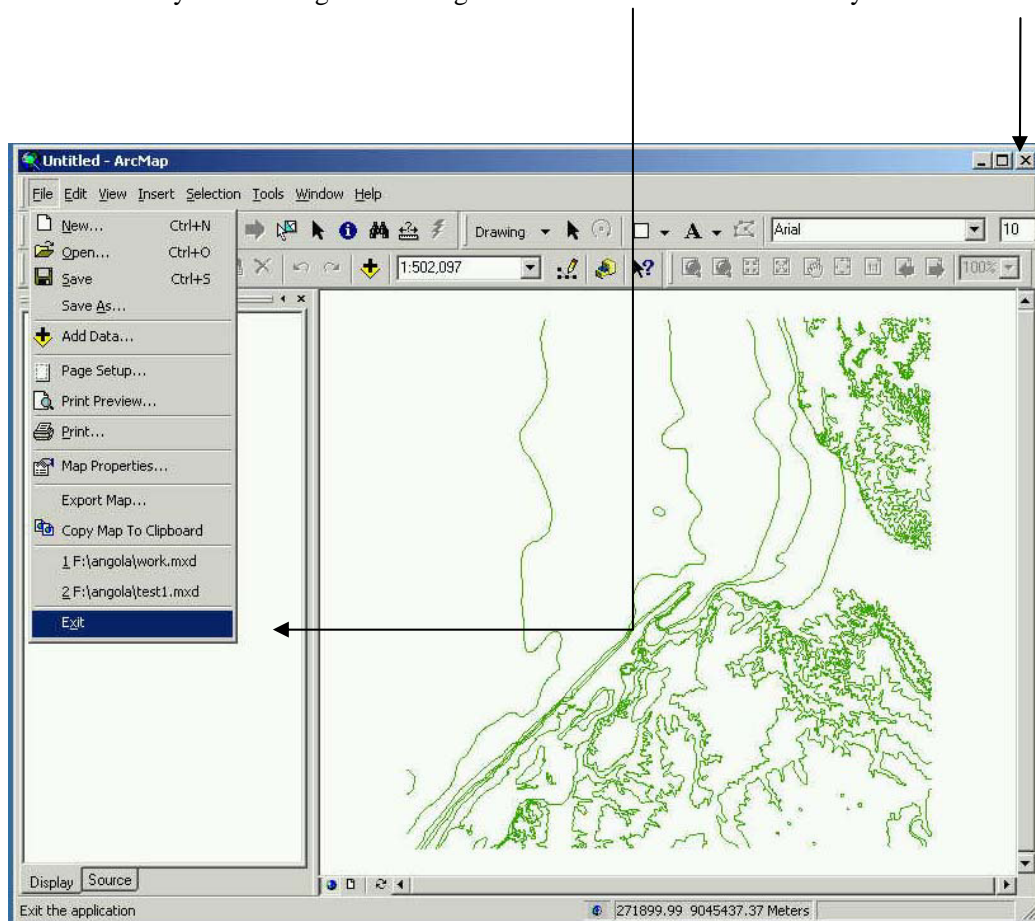4) Click ArcMap. Then ArcMap starts and you see the following window.

Note: You can also start ArcMap by clicking the Launch ArcMap button in ArcCatalog. Please see Page 3.
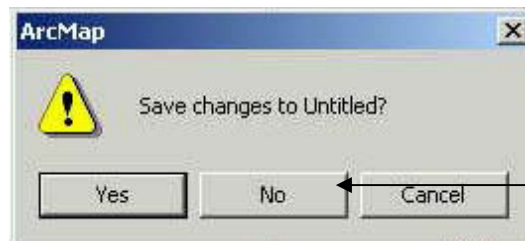

Click here to start using ArcMap

3.1.2 How to Exit ArcMap

There are two ways for exiting ArcCatalog. Click File and click Exit or only click the Close button.

Note: As the warning dialog box appears before closing ArcMap, click No if it is not necessary to save a map.
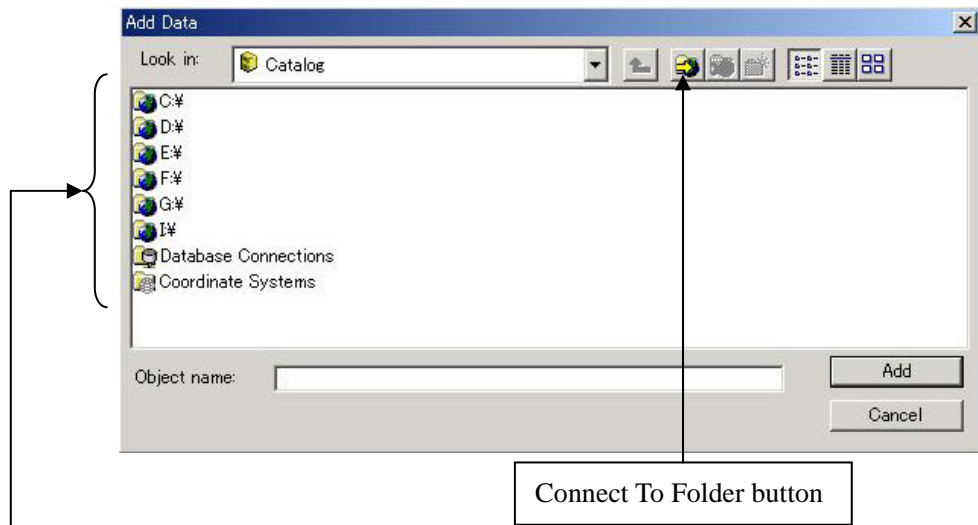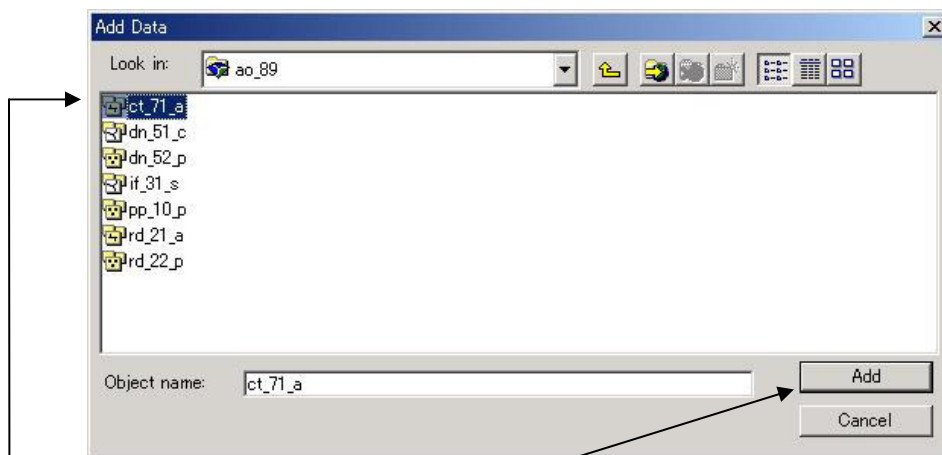
3.2 How to View a Map in ArcMap

3.2.1 How to Connect to Data

1) Click the Add Data button. Then the Add Data window appears.
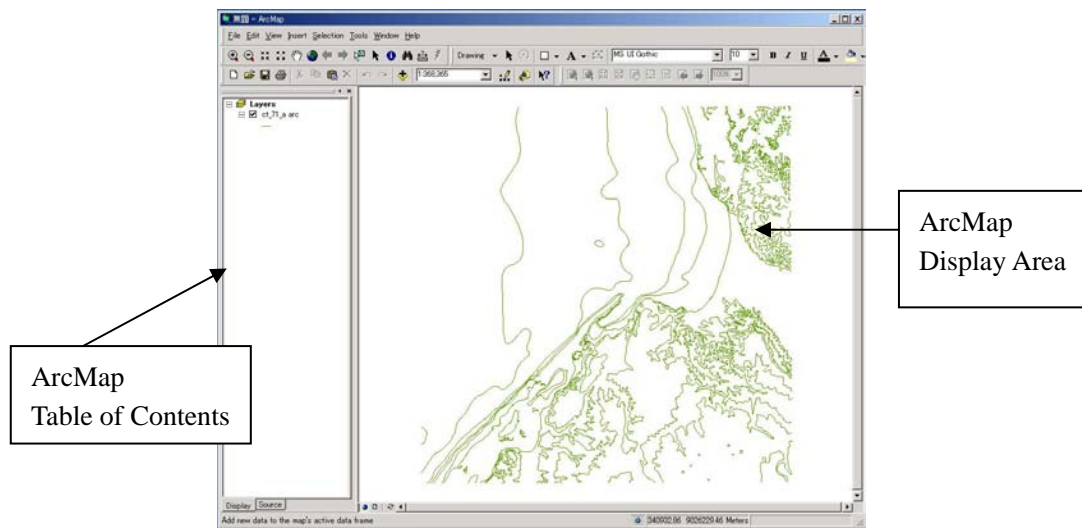

Connect To Folder button

2) Connect to your data by double-clicking. If you cannot see a drive you want, click the Connect To Folder button.
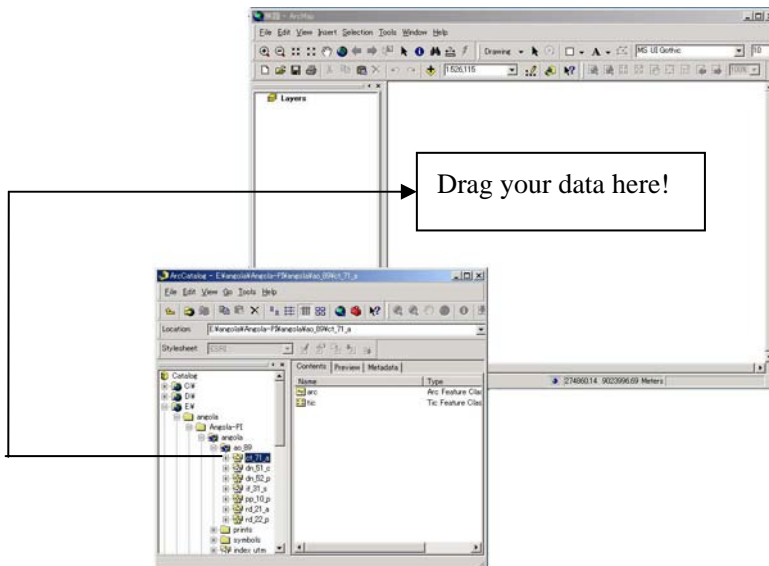

3) Click your data.

4) Click the Add button. Then your data appear in the map display of ArcMap like the figure of the next page.
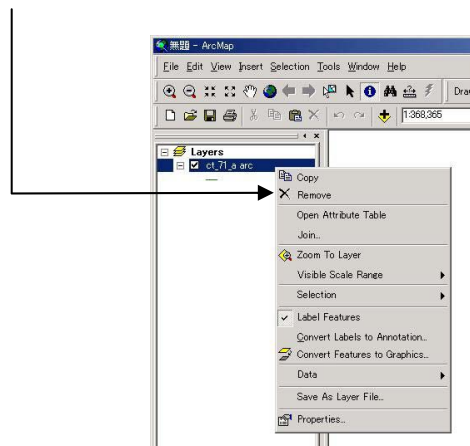
10

Example of Map Display:

Note: You can add your feature data from ArcCatalog to ArcMap by dragging.
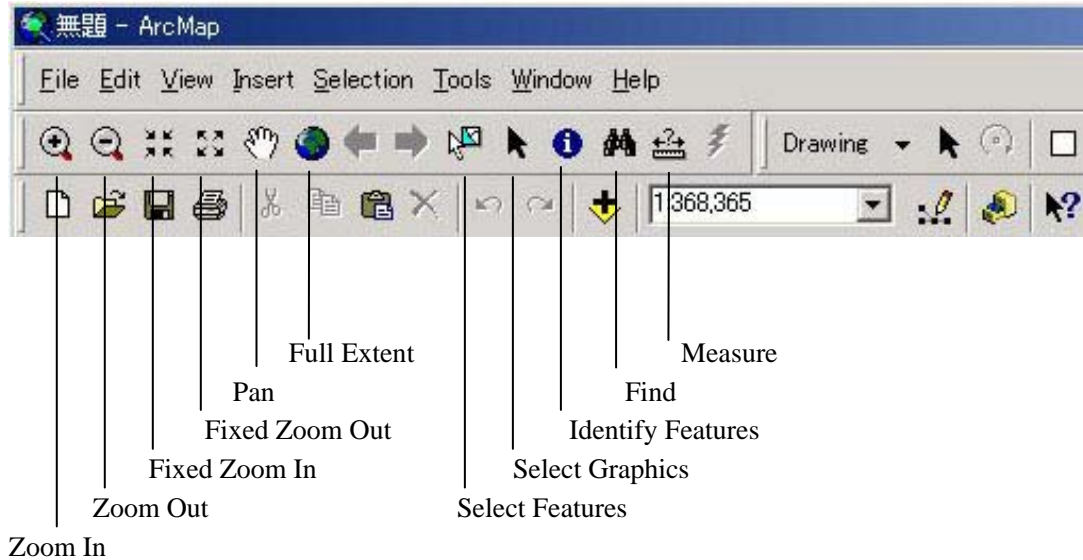

Note: To eliminate a map, right-click the map and click Remove.

3.2.2 How to Explore a Map

You can explore a map in several ways. The browse toolbar contains frequently used tools as the followings:
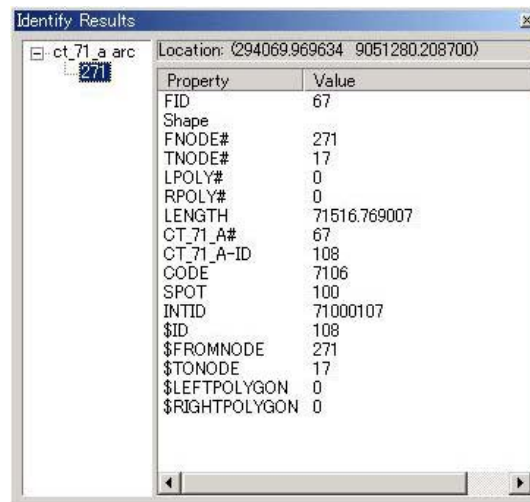

Operation for Zoom In or Zoon Out:

1) Click the Zoom In or Zoom Out button.
2) Drag a box on the map where you want to zoom in or zoom out.
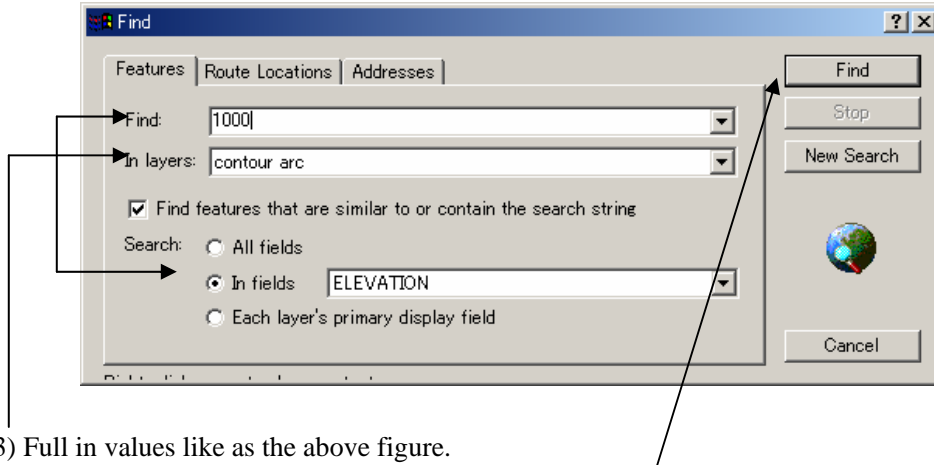
Operation for Identify Features:

1) Click the Identify Features button.
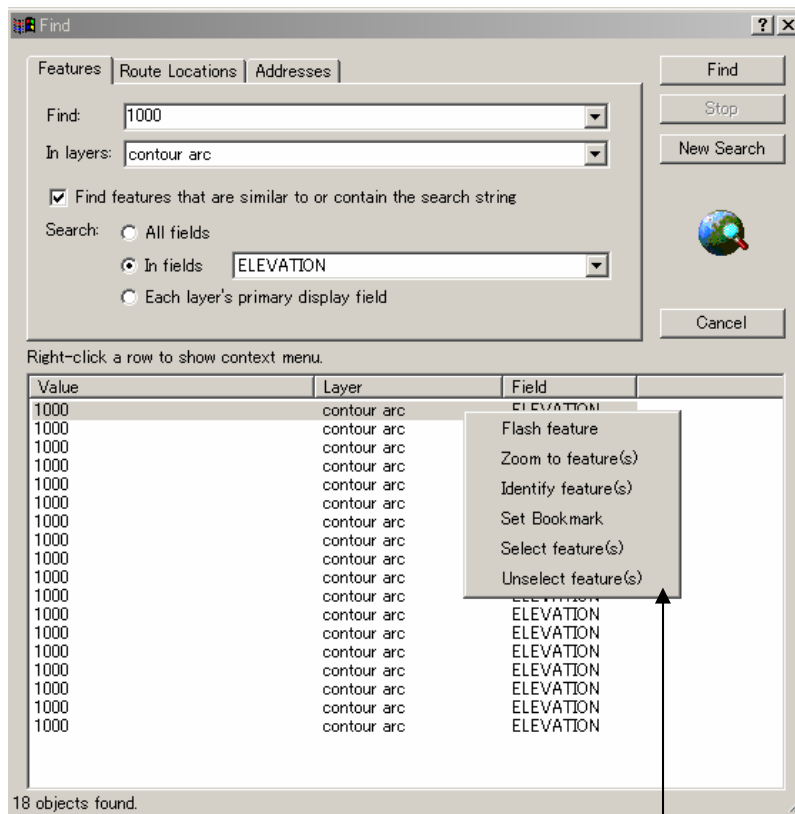2) Click a feature on the map that you want to know the feature attributes. Then the Identify Results window appears.

Operation example for Find:

1) Add contour arc from the sample data.

2) Click the Find button. Then the Find dialog box appears.

3) Full in values like as the above figure.

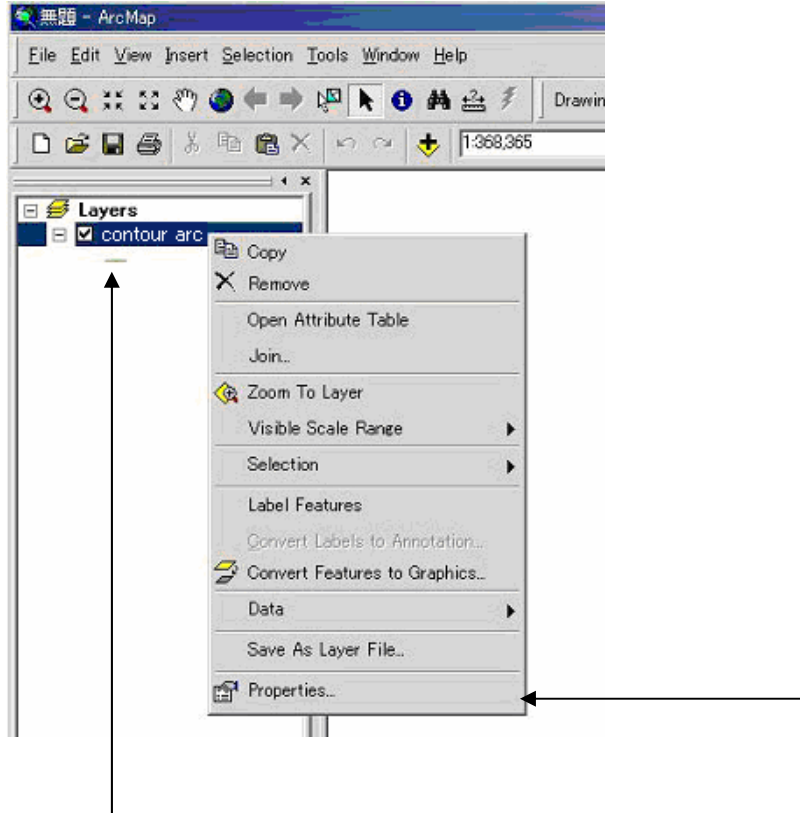4) Click the Find button. Then the result appears in the Find dialog box like the following.

5) Right-click one line of the result. Then the context menu appears.

6) Click one in the context menu to function it.

3.2.3 How to Change the Way of Feature Drawing on a Map

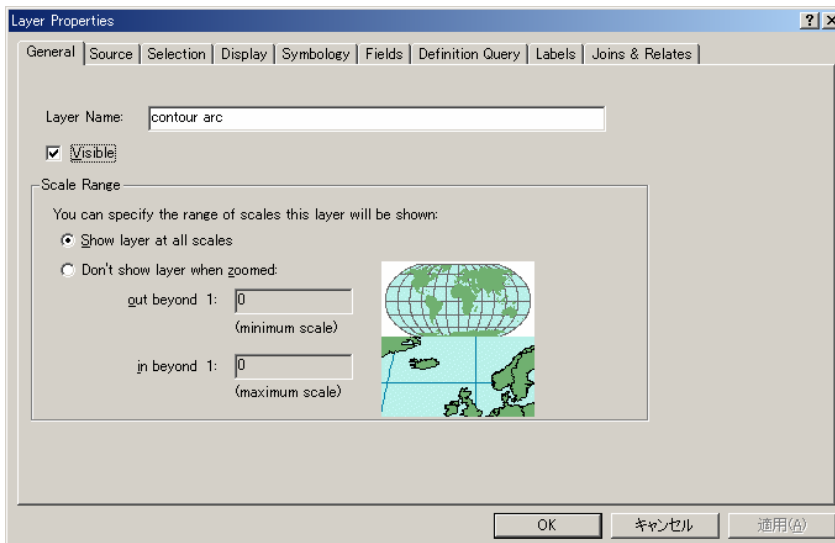**You can change the drawing way on a map.**

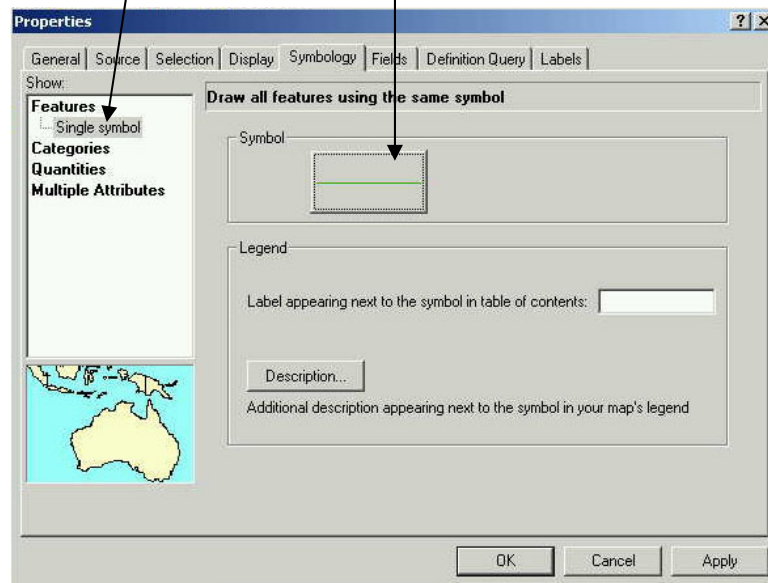**Example of Features/Single symbol:**

1) Right-click one layer that you want to change the drawing way.
   In this example, select contour arc.

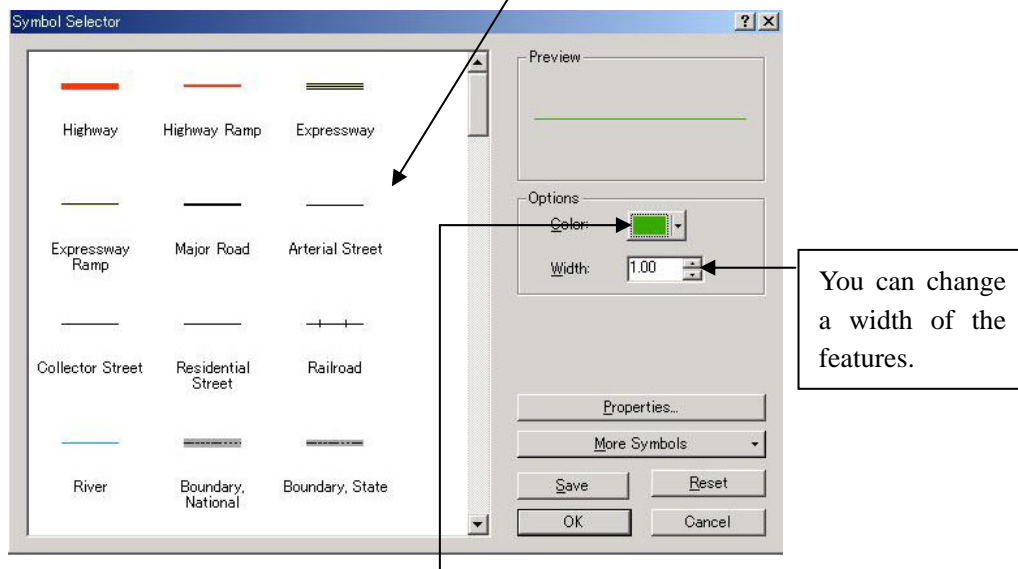2) As the pop-up menu appears, click Properties.

3) The following Properties dialog box appears.

4) Click Symbology tab and click the Symbol. If Features/Single symbol is not chosen, click Features and click Single Symbol.

5) As the Symbol Selector dialog box appears, you can choose one of predefined symbols.

You can change a width of the features.

6) Click Color. Then the color selector dialog box appears.
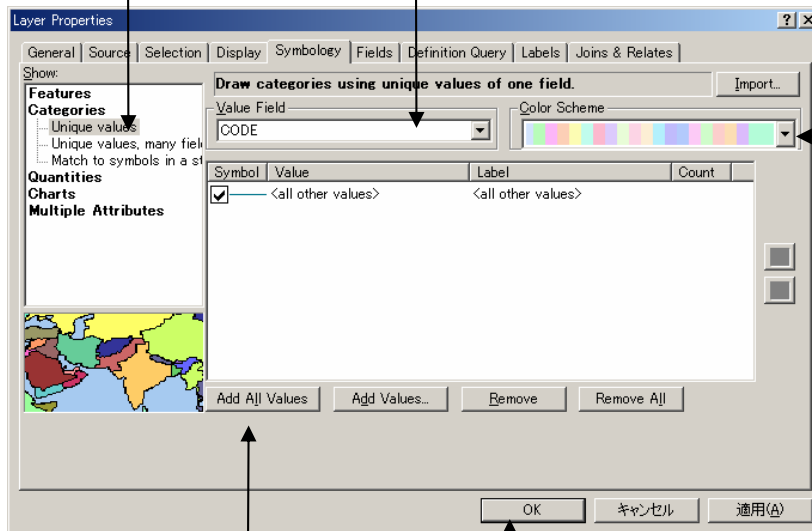7) Click a color that you want.

8) Click Ok in the Symbol Selector dialog box. After that click OK in the Properties dialog box. Then you can see the features with color that you wanted.

Example of Categories/Unique values:

1) Open the Properties dialog box and click the Symbology tab by the same way as Features/Single symbol on Page 15.

2) Click Categories and click Unique values.

3) Click the down arrow and select a value field that you want.

4) Select one of the color schemes.
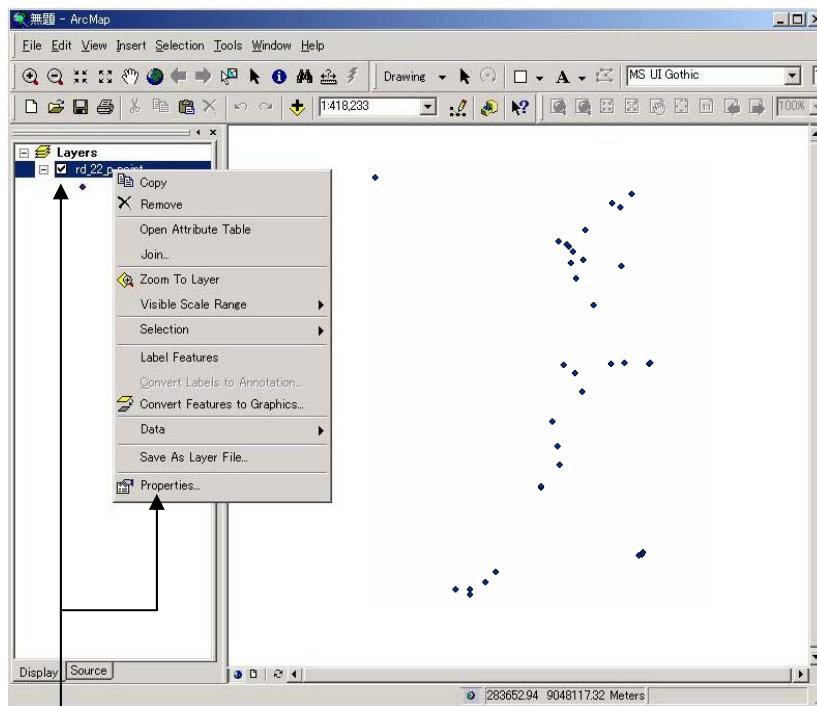
5) Click Add All Values.

6) Finally click OK. Then you can see the features with colors that you wanted.

Note: You can choose several show ways as below.
-Features/Single symbol
-Categories/ Unique values
-Categories/ Unique values, many fields
-Categories/Match to symbols in a style
-Quantities/Graduated colors
-Quantities/Graduated symbols
-Quantities/Proportional symbols
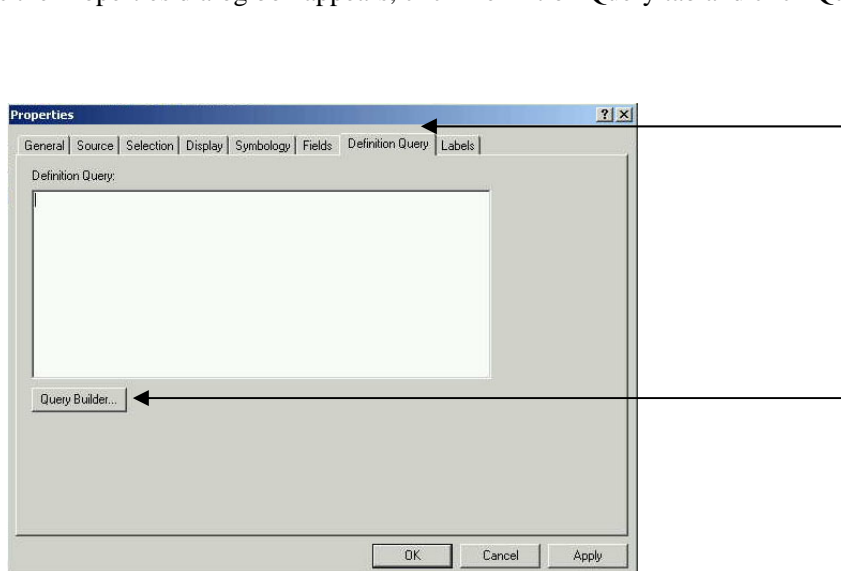*-Multiple Attributes/Quantity by category*

3.2.4 How to Query Data

You can select some features depend on attributes values. In this example, the way of query data is explained using the sample data of hydr_pnt point.
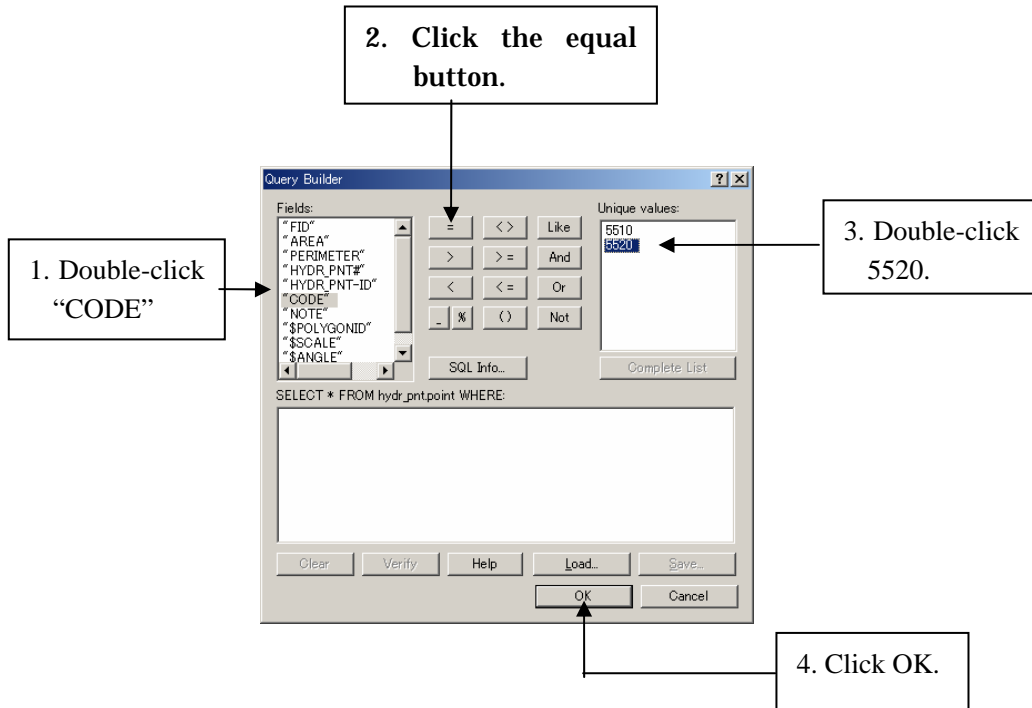

1) Right-click hydr_pnt point in the ArcMap table of contents and click Properties.

2) As the Properties dialog box appears, click Definition Query tab and click Query Builder.
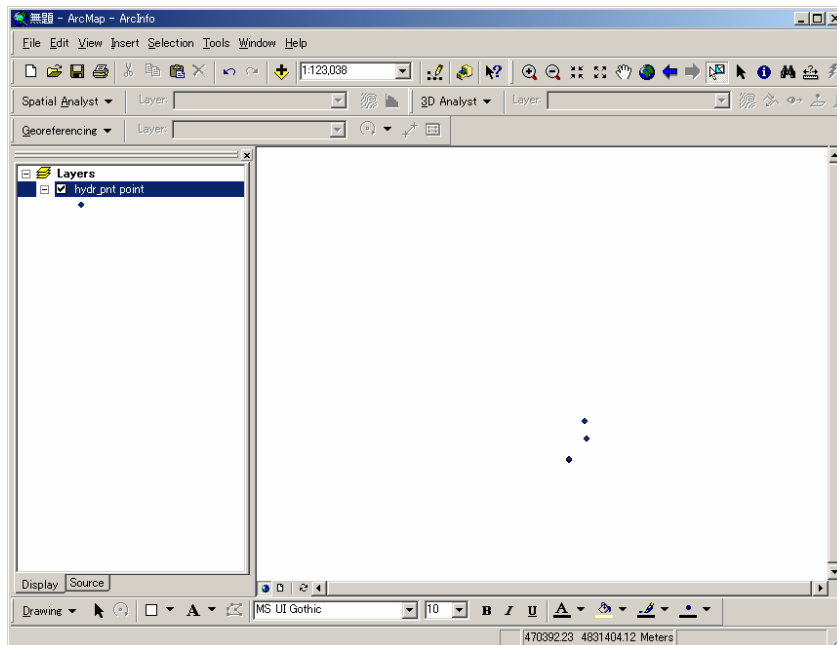
3) As the Query Expression dialog box appears, fill in values that you want. In this example, select CODE = 5520 like the following figure.

2. Click the equal button.

1. Double-click "CODE"

3. Double-click 5520.

4. Click OK.

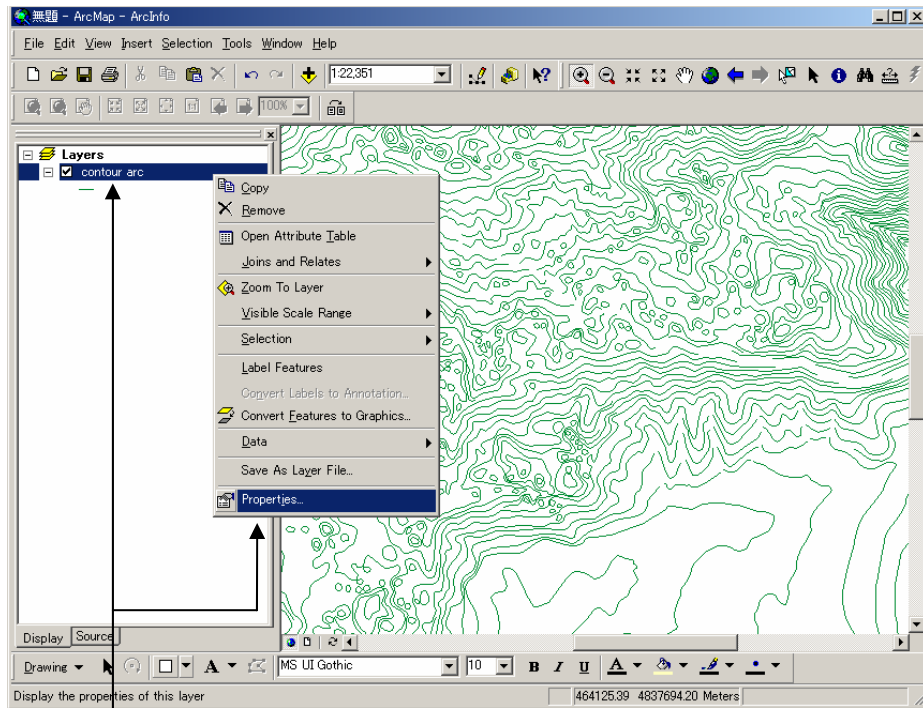4) As the Properties dialog box appears again, click OK.

5) The result is viewed. Please compare with the map of Page 17.

Note: To cancel the query result, display the Query Expression dialog box of 3) and click Clear, after that close the box by OK and close the Properties dialog box by OK.

3.2.5 How to Add Labels to a Map

You can add some labels from the attributes data. In this example, the way of adding labels is explained using the sample data of contour arc.

1) Right-click contour arc in the ArcMap table of contents and click Properties. (Do "Zoom in" at any place for display.)

2) As the Properties dialog box appears, click Labels tab and follow the below instructions.
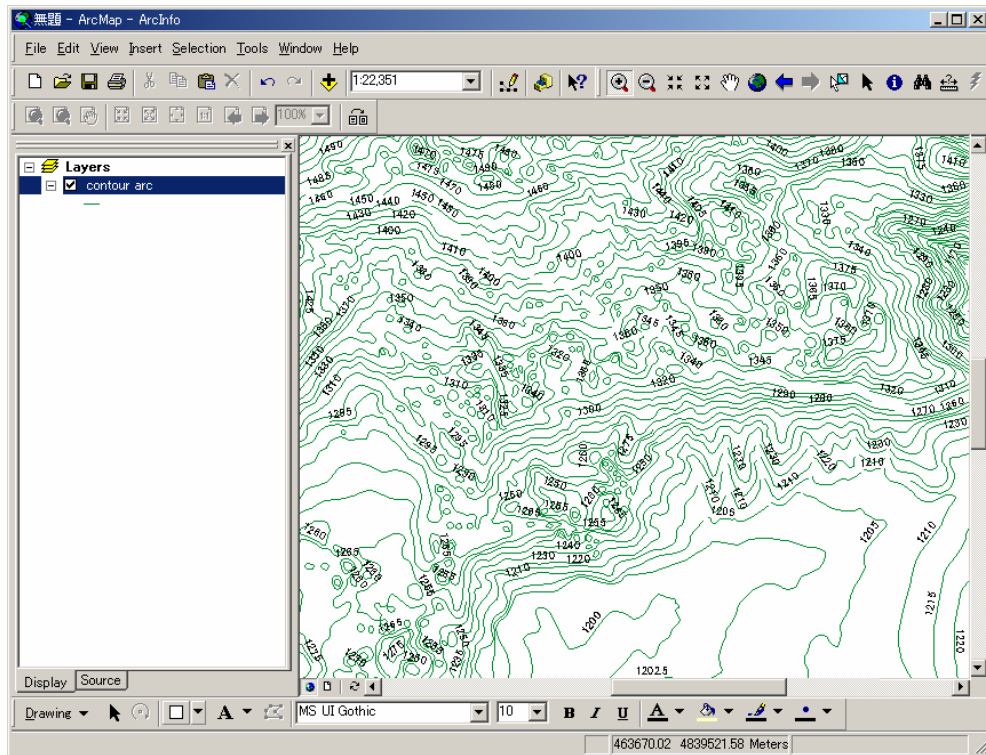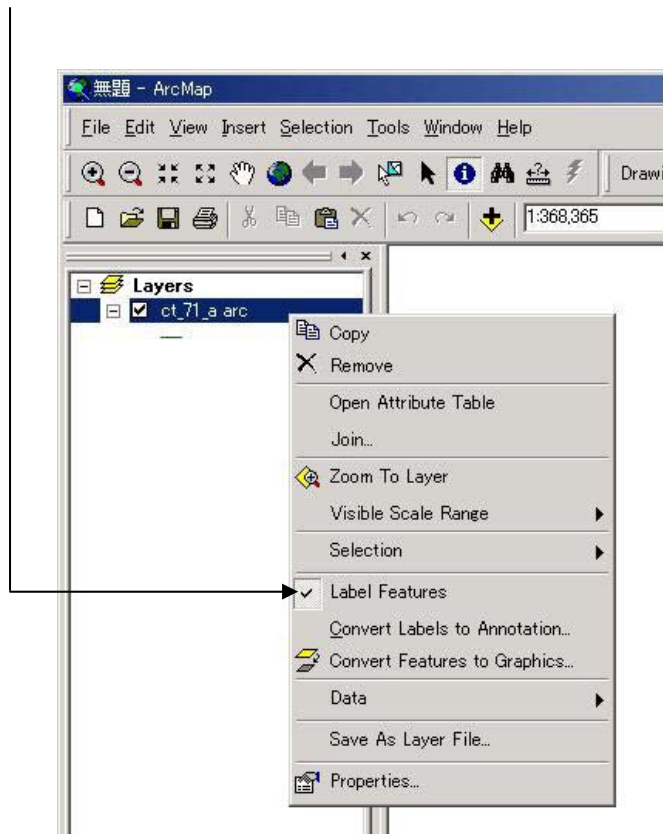

1. Check Label Features

2. Click the down arrow and select a label field that you want. Here, select SPOT.

3. Click OK.

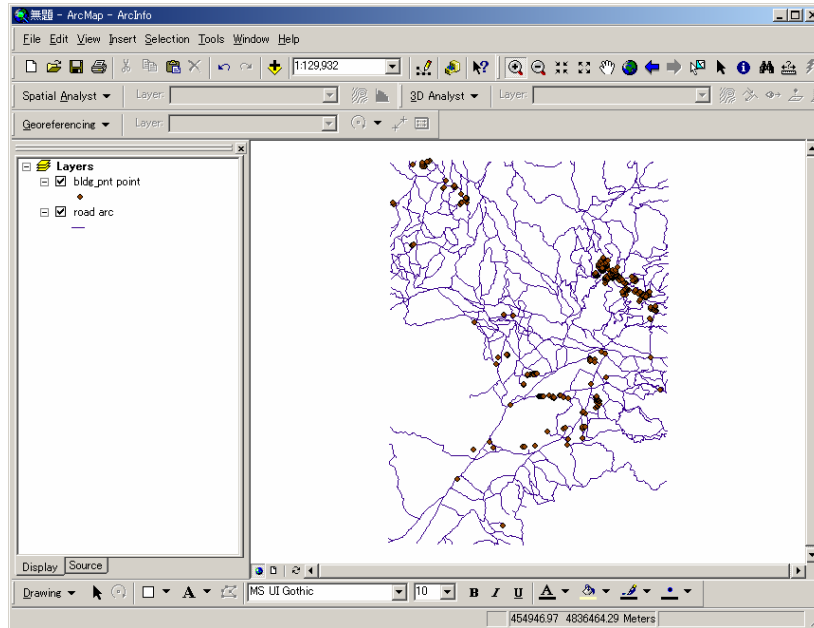3) The result is viewed. Please compare with the map of Page 19.

Note: To eliminate the label, right-click contour arc on the ArcMap Table of Contents and click Label Features. If you want to add the label again, right-click contour arc and click Label Features again.
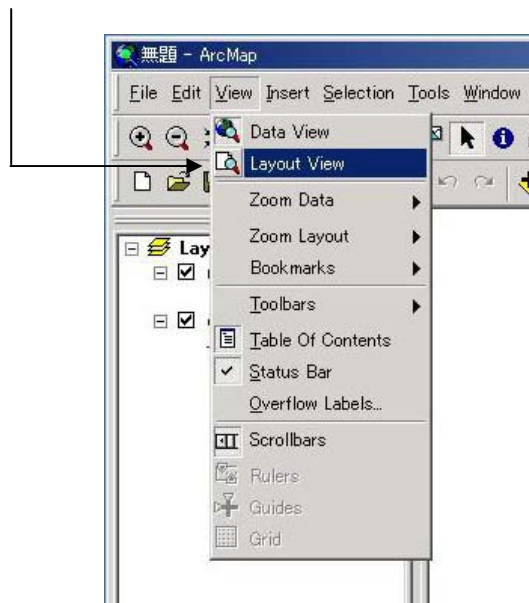

20

3.3 How to Work with the Map Layout

ArcMap provides two different ways to view a map - Data View and Layout View. Each view lets you look at and interact with the map in a specific way. In Layout View, you see a virtual page upon which you place and arrange map elements. So the Layout View is usually used for making paper printed maps.
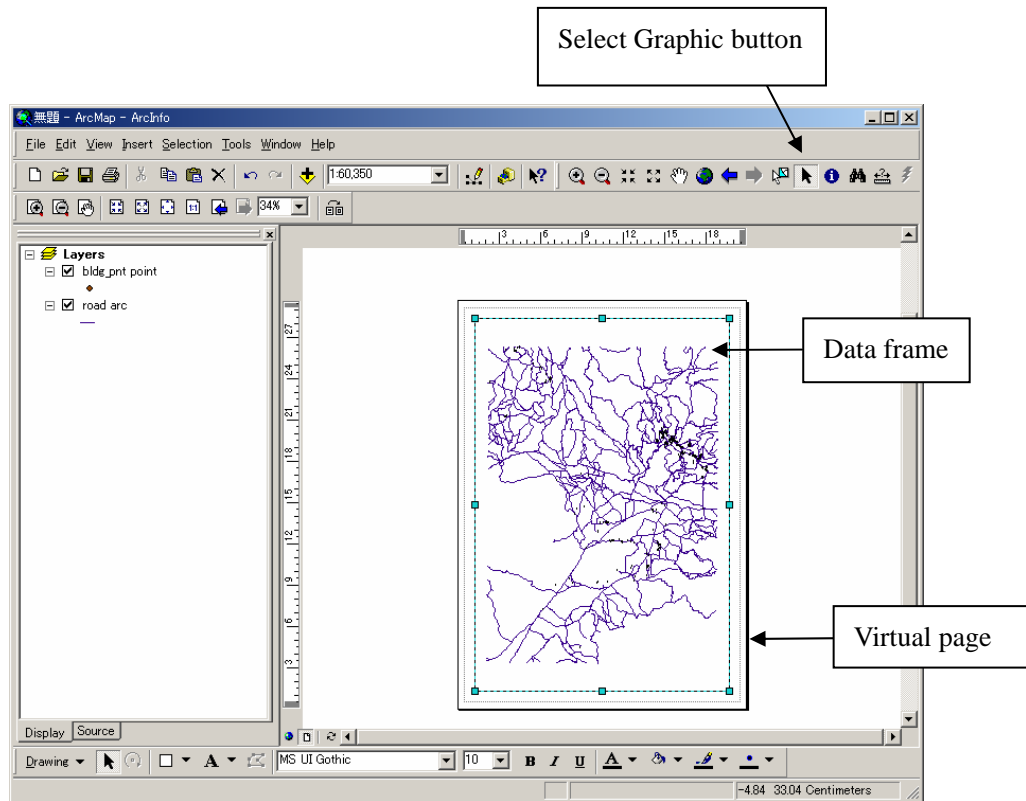
In this section, the sample data of bldg_pnt point and road arc are used for explaining of the Map Layout. The data view of these data is shown below.

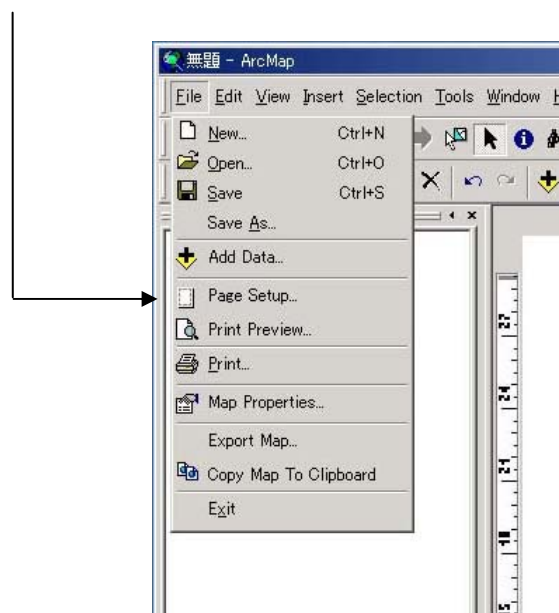1) Click View and click Layout View.

2) The map appears on a virtual page.

Select Graphic button
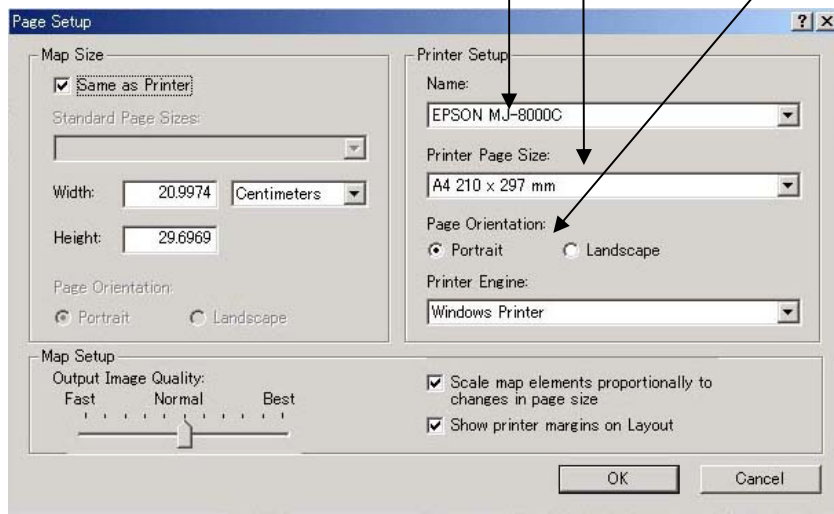
Data frame

Virtual page

Note: You can change the data frame size. When the Select Graphic button is active, the data frame is outlined with a dashed line and has selection handles at its corners and edges like the above figure. If you point to one of the selection handles, the cursor becomes a two-pointed resize cursor. So, drag the resize cursor to change the data frame size.
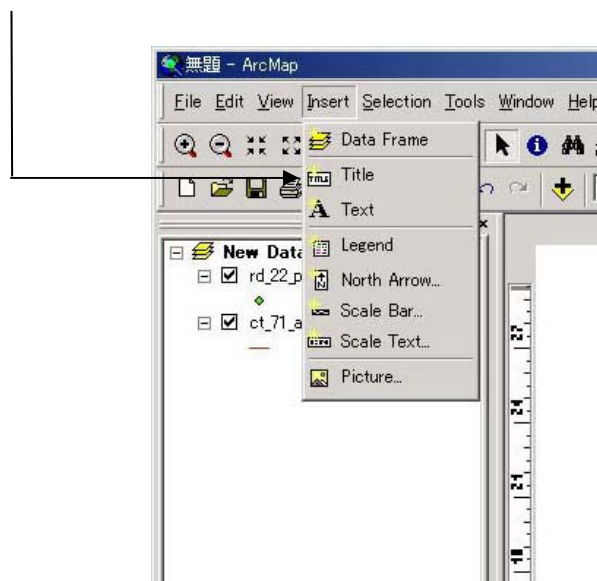
3) Click File and click Page Setup.

22

4) As the Page Setup dialog box appears, select Name, Printer Page Size and Page Orientation. After that click OK.
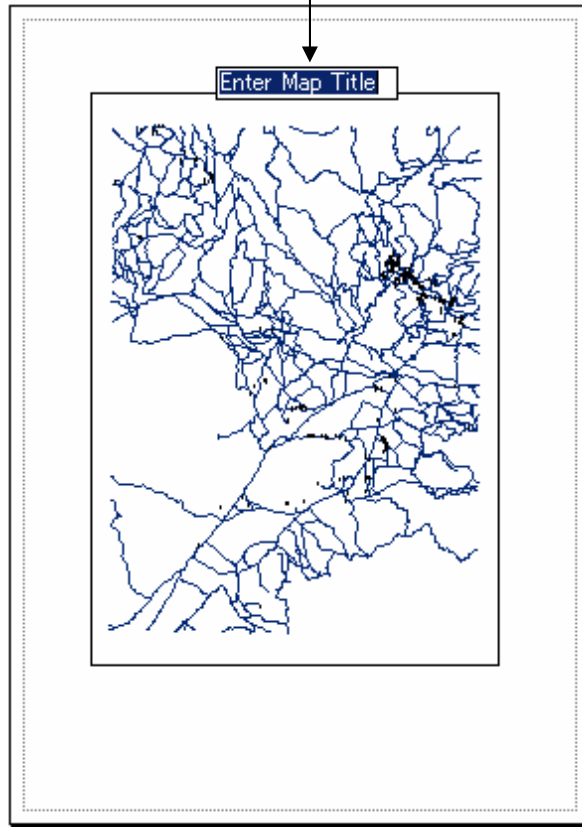

In the Layout View, you can add some map elements such as Title, Legend, North Arrow, Scale Bar and so on. The way to add these elements is explain below.
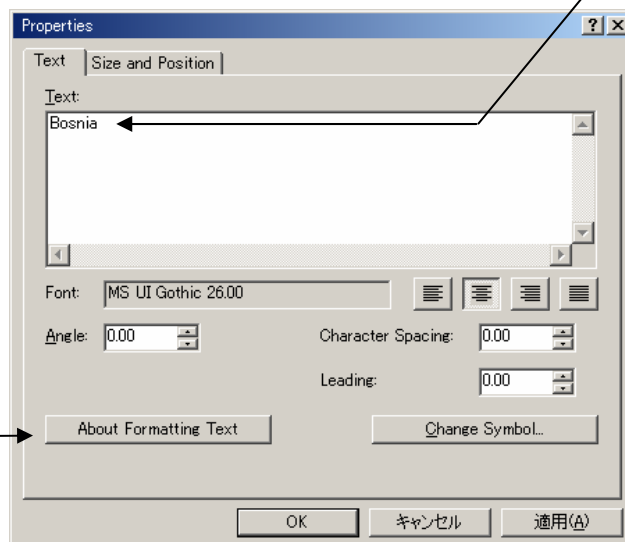
<u>Add a Title:</u>

5) Click Insert and click Title.

6) As the title "Enter Map Title" appears, type your title and press Enter.
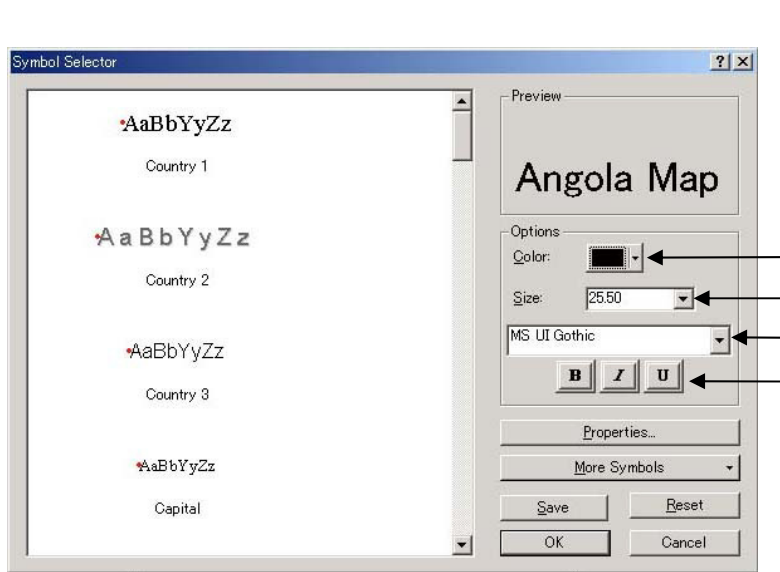

Note: The Properties dialog box appears by double-click on the title. You can change title text and its size, position and style.
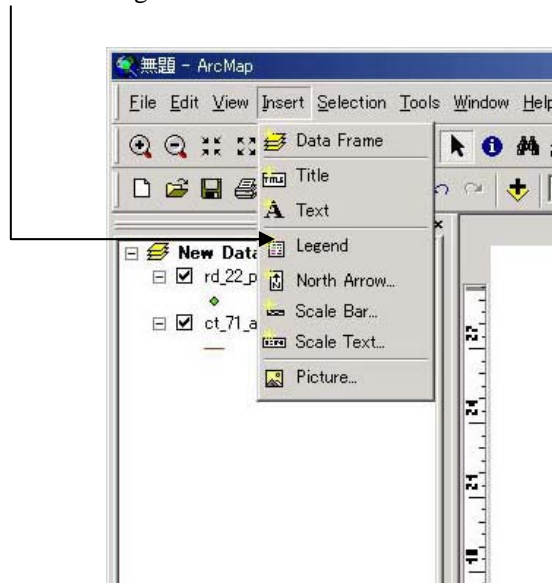

If you click Change Symbol, the Symbol Selector appears.

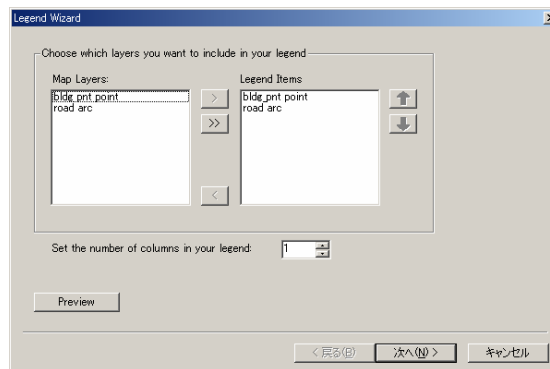*You can change Color, Size, Font, etc. on the Symbol Selector.*
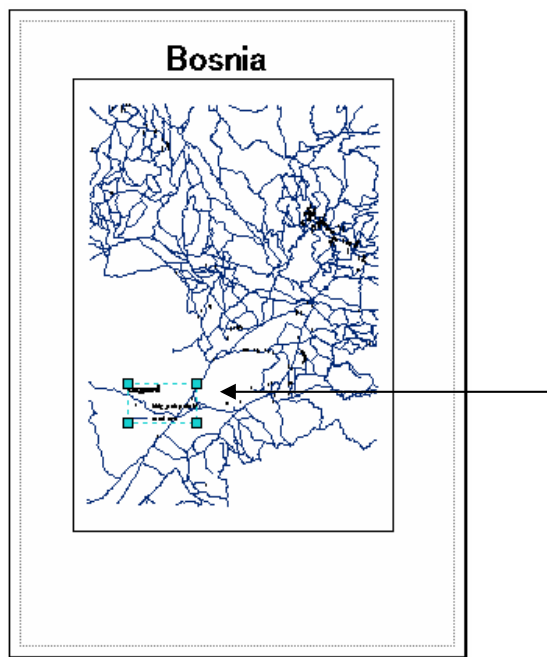

Add a Legend:

7) Click Insert and click Legend.

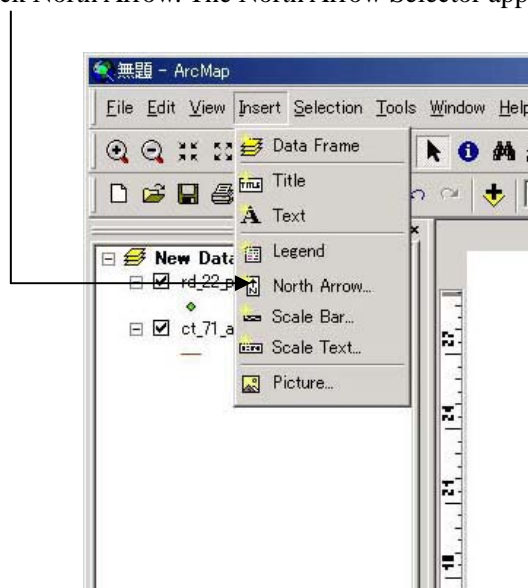As the Legend Wizard appears, operate following the instructions.

8) As the legend appears, drag the legend to move it to the empty space. You can resize it by dragging the blue selection handles.
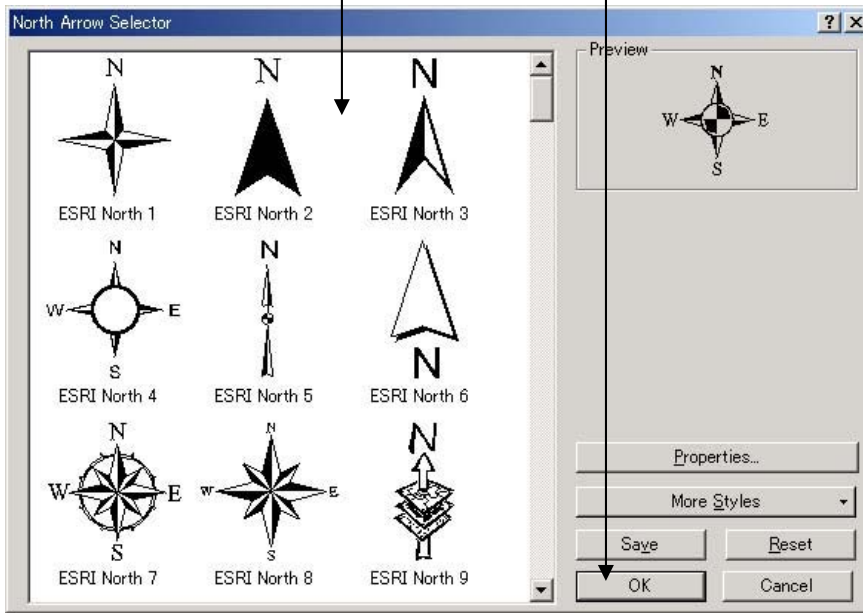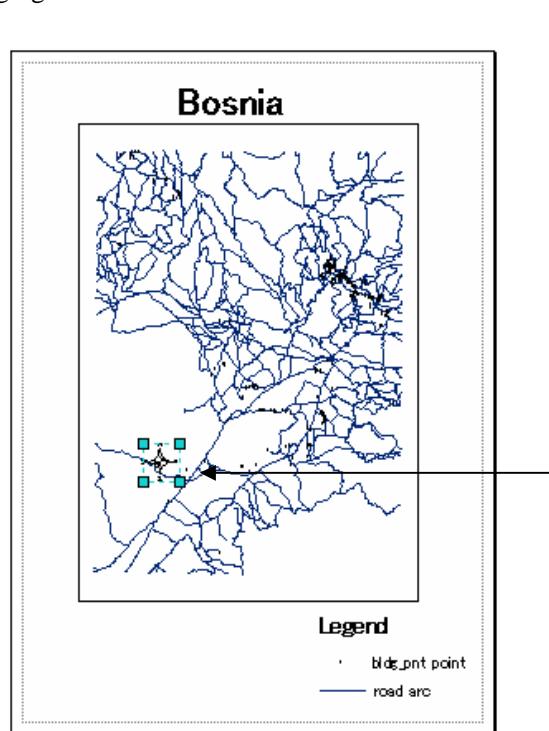

Add a North Arrow:

9) Click Insert and click North Arrow. The North Arrow Selector appears.

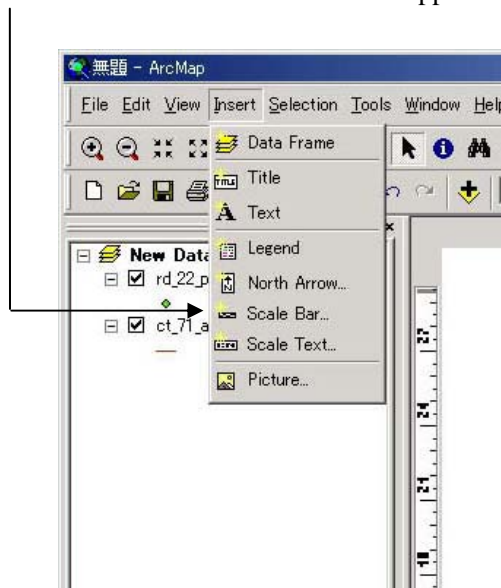10) Click one of the North arrows and click OK.

11) As the North arrow appears, drag the North Arrow to move it to the empty space. You can resize it by dragging the blue selection handles.
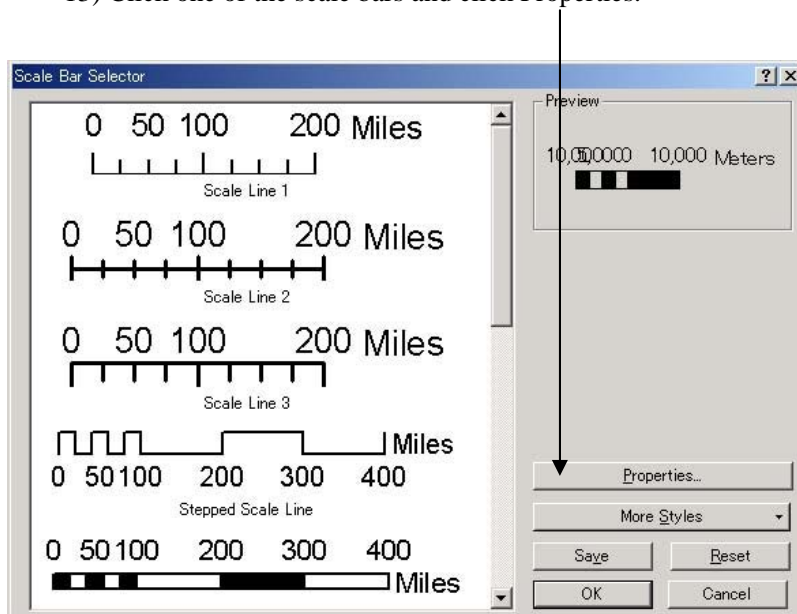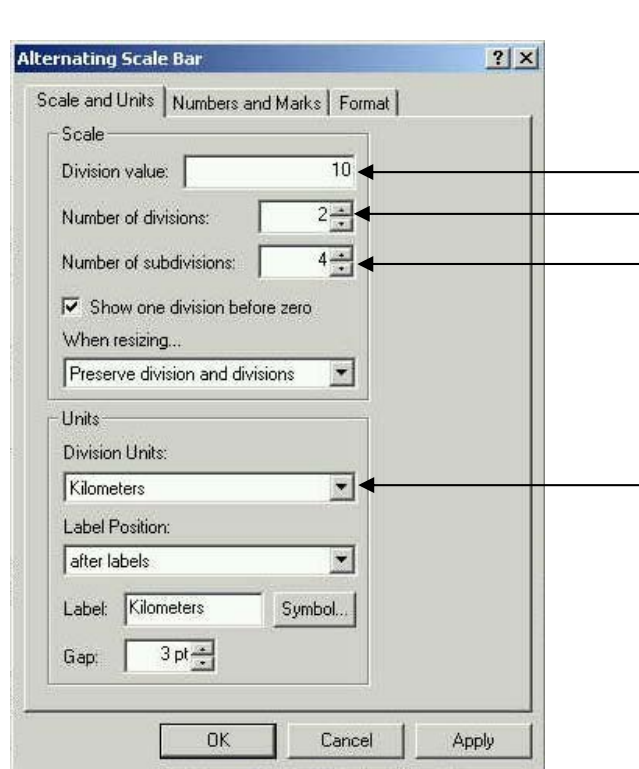
Add a Scale Bar:

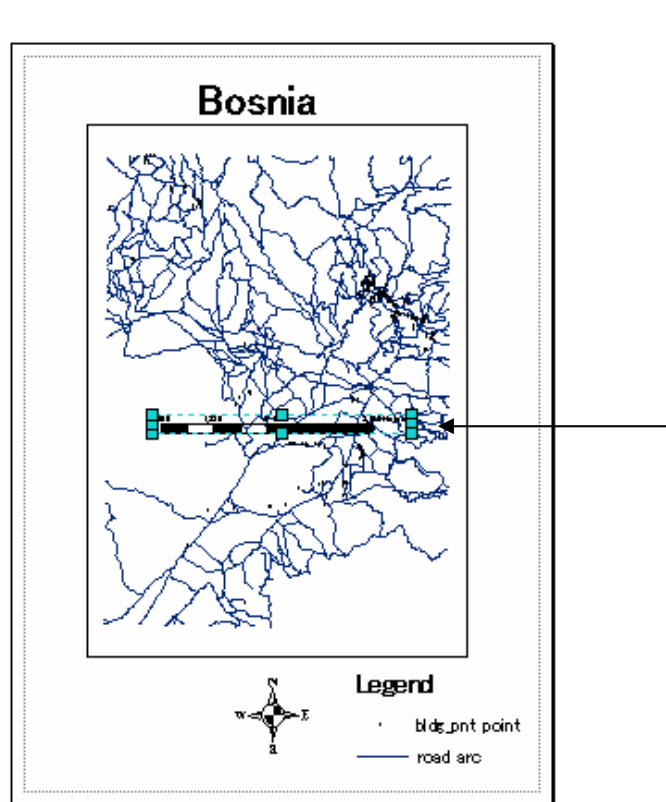12) Click Insert and click Scale Bar. The Scale Bar Selector appears.

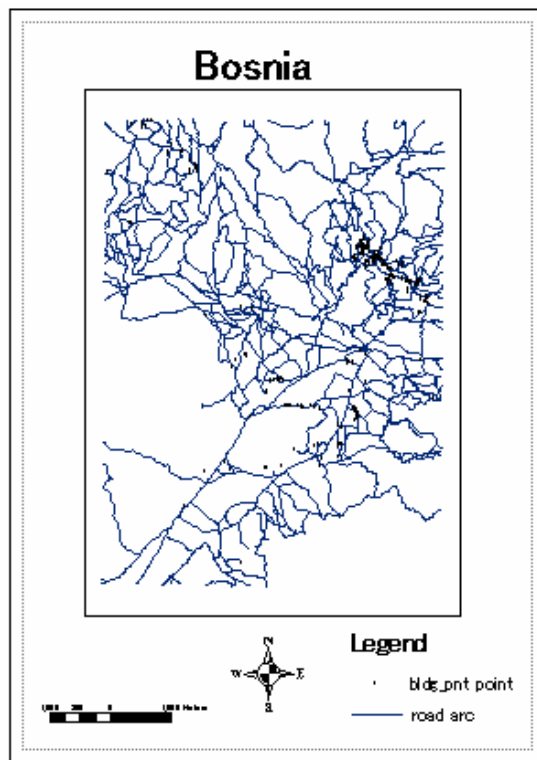13) Click one of the scale bars and click Properties.

14) As the Alternating Scale Bar appears, fill in the values like the following figure for this example.

15) As the scale bar appears, drag the Scale Bar to move it to the empty space. You can resize it by dragging the blue selection handles.
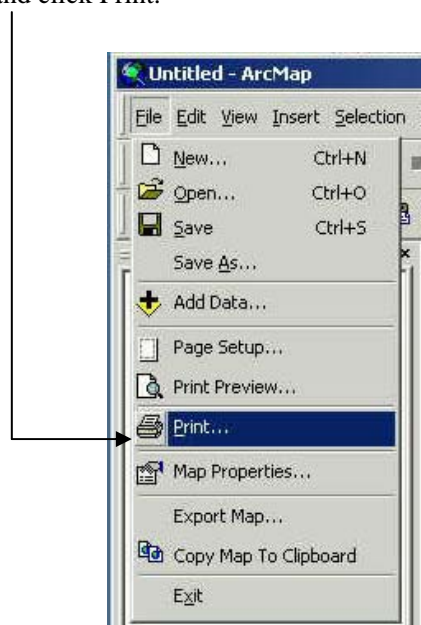
Now you are ready for printing your map like the below figure. Follow the next instructions to print your map.
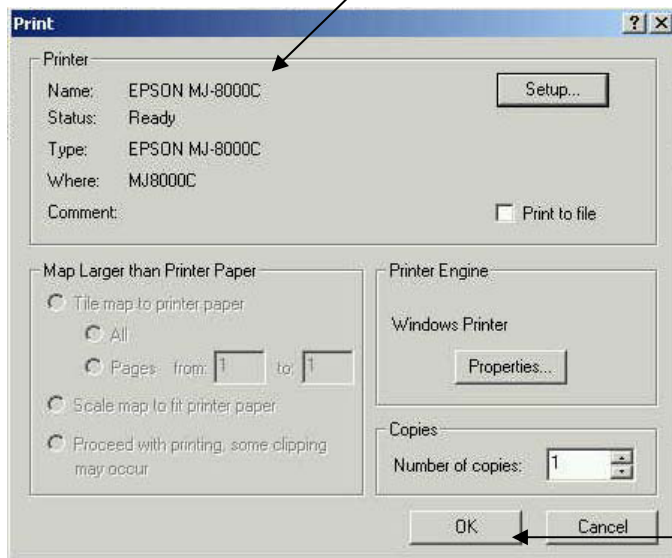

How to Print a Map:

16) Click File and click Print.

17) As the Print dialog box appears, check the default printer and click OK.

Note: See Pages 22 and 23 about the Page Setup.
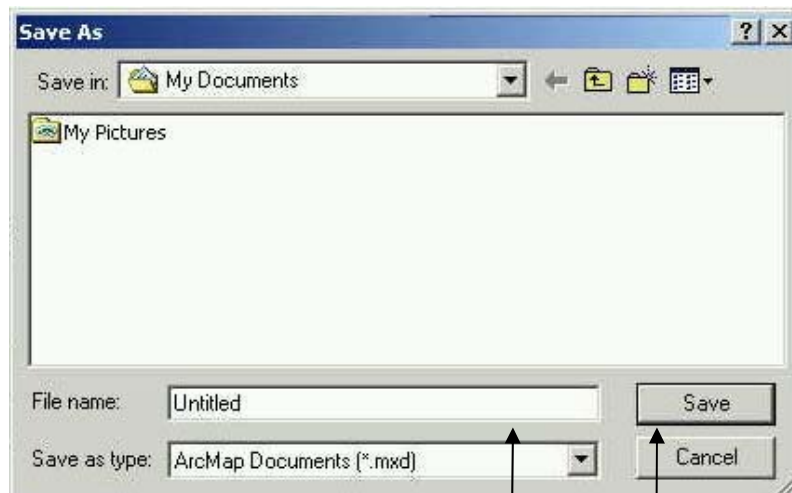
3.4 Saving a Map

You can save a map on ArcMap. You save a map as a document and store it on your hard disk. Arc Map automatically appends a file extension (.mxd) to your map document name. The data displayed on a map is not saved with it. Map layers reference the data sources in your GIS database.

After finishing your job on ArcMap, leave the map on the Data View or on the Layout View and follow the next instructions.
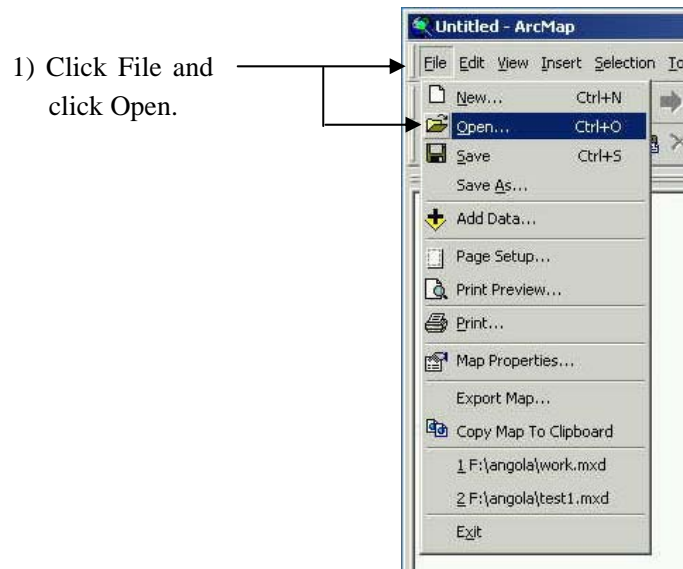
1) Click File and click Save As.

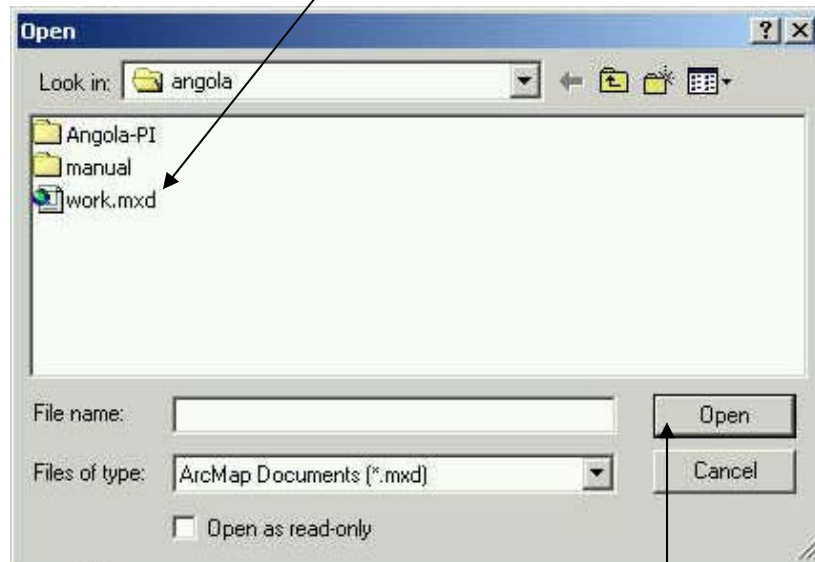2) Navigate to a folder you want to save a .mxd file.

3) Type your .mxd file name and click Save.

Note: When you want to open the saved map, only double-click the .mxd file on Microsoft Explorer. Or you can open the map by clicking File/Open and selecting the .mxd file on ArcMap.

1) Click File and click Open.

2) Navigate to your .mxd file and select the .mxd file.

3) Click Open. Then the saved map is opened on ArcMap.