

Co-Displaying Property Data Maps with the City of Toronto Contours using ArcMap 10

These procedures outline:

- A. Downloading spatial data (from the Ryerson University Library website)
- B. Uncompressing files
- C. Setting projection of the data frame
- D. Co-displaying contours and property data maps
- E. Labeling contours
- F. Exporting to AutoCAD (DWG)

In order to use these instructions, you must have ArcGIS. In this example, we are going to use property data maps (PDM) and City of Toronto contour shape files that have been downloaded from the Ryerson University Library website.

Section A

Downloading spatial data from the Ryerson University Library Website

Step 1: Browse to the Ryerson University Library website (www.library.ryerson.ca) and *click Map & Data Resources*. This will take you to the Geospatial, Map & Data Centre page.

The screenshot shows the RULA website homepage. At the top, there is a banner with the RULA logo and several featured items. Below the banner is a navigation bar with links for 'my.ryerson.ca', 'mobile library', and 'follow us on twitter', along with a search box. The main content area is divided into three columns. The left column contains a navigation menu with links for 'Catalogue', 'Articles and Indexes', 'Research Help', 'About the Library/FAQ', 'Interlibrary Loan', and 'Collections:'. The 'Map & Data Resources' link is highlighted with a red dashed box. The middle column is titled 'Library News' and contains several news items with blue underlined links. The right column is titled 'Quick Picks' and contains several blue underlined links.

Step 2: Click on **City of Toronto Resources**. This will take you to the Toronto Resource page where you can read about and link to various data files.

MADAR - Home
Geospatial Resources
Social Science Data
Paper Map Resources
Geospatial Community
What's New
About Us
Frequently Asked Questions
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Maps and Data at Ryerson (MADAR)

Geospatial Data



[Social Science Data](#)

- Create your own map using [SimplyMap](#) mapping software
- Access commonly used [City of Toronto Resources](#)
- Access various [GIS Procedures](#)
- Browse through other [Internet Resources for GIS Data](#)

Step 3: In the Toronto resource section, *click* on the **GIS and AutoCAD** link.

MADAR - Home
Geospatial Resources
-Toronto Resources
--GIS/AutoCAD
--Aerial Photography
--Digital Maps
-About GIS
-Working with Geospatial Data
-Internet Resources
-Data Licensing

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City of Toronto Geospatial Resources Available to Ryerson Students

The Geospatial Map and Data Centre in the Ryerson University Library provides members of the Ryerson community with access to various Geospatial Resources that focus on the City of Toronto. These resources include [GIS and AutoCAD](#) files, [Aerial Photography](#), and [Digital Maps](#). A selection of [Paper Map Resources](#) is also available for the City of Toronto. This section of the Maps and Data at Ryerson (MADAR) website highlights the most heavily used resources by members of the Ryerson community. Additional resources may be found by searching the [MADAR](#) database.

Additional reference materials including Print Maps, Atlases, Books and Periodicals are available through the Ryerson University [Library Catalogue](#).

The first listing you should see is the Property Data Maps. This should appear as a link which you can *click* on. After clicking on the link you should be seeing information about the City of Toronto Property Data Map. To download the map *click* on *Link to index map*.

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City of Toronto Property Data Map 2010 (DWG Version)

Publication Date : 2010

Edition : 2010

Geography : [City of Toronto](#)

Description : A combination of topography and assessed parcel boundaries for the City of Toronto including: Etobicoke, North York, Scarborough, and Toronto (Downtown). City map layers include: Street and Property Boundary Lines, Building Lines, Garages, Railway Tracks, City Paths and Utilities infrastructure (hydro-poles, hydrants, traffic lights, and general light poles).

Accessing the Data : Access data via index map link below.

Index Map: **ATTENTION:** This index map was created using SVG (Scaled Vector Graphics) technology. For optimal viewing, use Microsoft Internet Explorer. If the interactive map does not display properly, click [HERE](#) to download and install the SVG viewer.
[Link to Index Map](#)

Note: This will open the data in the windows browser. If you are having problems with the browser it is recommended you use Firefox or allow the active X control to be installed via the dialogue box that will open at the top of the browser.

Step 4: Select the location that you wish to extract by using the “i” tool located on the right hand side of the menu bar. For this example we will be choosing the Ryerson campus area which is 51H-11. If you are having trouble finding areas, you can use the zoom tool to read street names and determine the location that way.

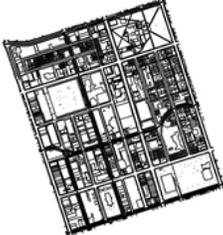


Step 5: *Clicking* on the area will bring up the license agreement and terms of use. After reading this page, scroll to the bottom and click “I agree”. Then click on the file name to download the data. In this case it is the file “51H-11”.

Step 6: Now that we have the property data map, we will need to add contours.

Contours are lines that connect a series of points of equal elevation and are used to illustrate topography, or relief, on a map. They show the height of ground above Mean Sea Level in either feet or metres (in this case it will be 1 meter intervals) and can be drawn at any desired interval.

Going back to the GIS and AutoCAD section under Toronto resources, the contours file is directly under the property data map file.

GIS and AutoCAD Data	<i>Digital maps can be found by searching Geospatial resources in the Map and Data Resources section of the library web site.</i>
Property Data Maps (2010 Update) Topography and assessed parcel boundaries for the City of Toronto. Click HERE for the PDF Version	
Contours City of Toronto (1 metre interval) contour line shapefiles.	

Clicking on the “Contours” link will take you to the information page about the file. As previously done, find the “Link to index map” and *click* on it. You will be required to identify which area of Toronto you would like to download. If you are unsure of which area you need, you can always click on the any of the boxes, which will then zoom into the map where streets have been labeled. For this exercise, click on “**NB**” and then locate where the Ryerson campus is (Yonge and Dundas) and the click on that section which is also labeled “NB”.

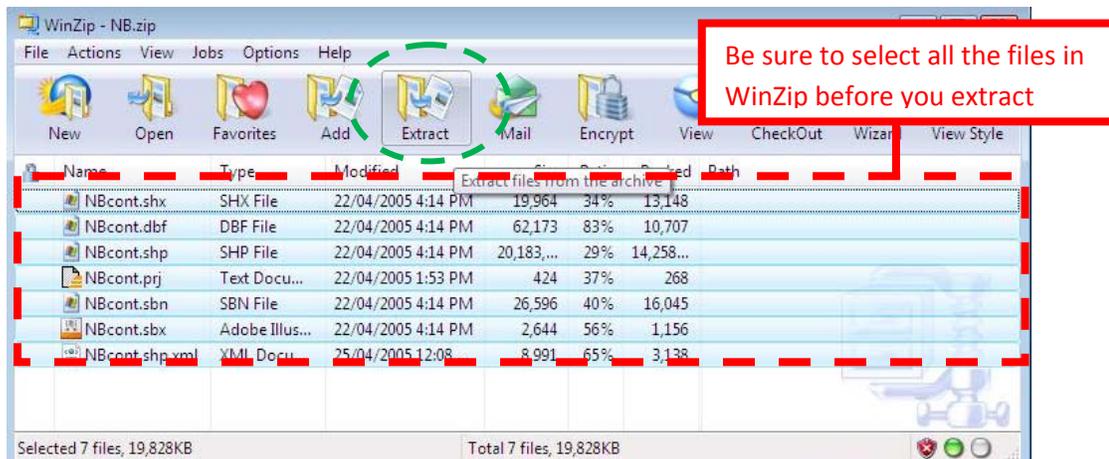


Once again, read the terms of use and then click on “I agree” to download the data.

Section B Uncompressing the Downloaded Files

As you may have noticed while downloading the files, the extension for all the files was **.zip**. This is a Zip file or compressed file. Files are stored in this format on the server to save space. The following section outlines the procedure for uncompressing these files.

1. Browse to the location of the contour shape file.
 2. *Double click* the file to open it in WinZip. Be sure to select all the files and then extract them all to one folder. **Repeat steps 1 and 2 for the Property Data map.**
- Note:** If you are using Windows XP this operation can be achieved by *right clicking* the zip folder followed by, *clicking on Extract All* and then follow the instructions in the **Extraction Wizard** for each file downloaded.



Section C

Setting the Projection of the Data Frame

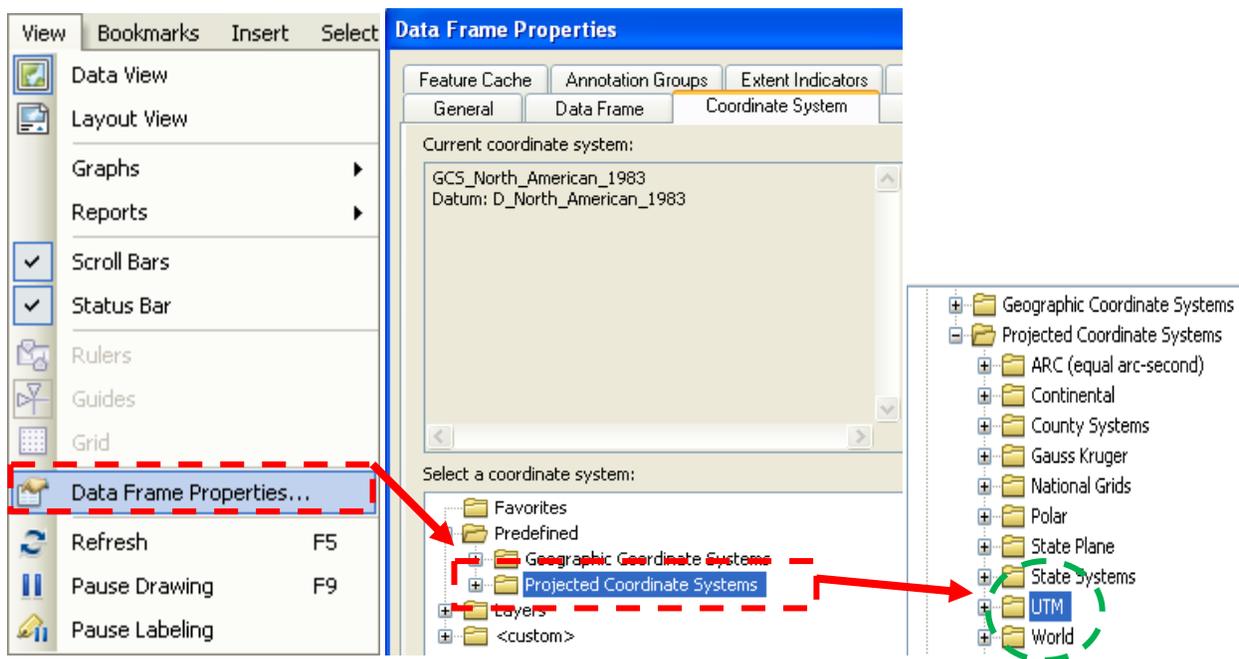
A map projection is any method used in cartography (mapmaking) to portray the surface of the earth or a portion of the earth on a flat surface. Essentially, flat maps could not exist without map projections. Distortions of conformality, distance, direction, scale, or area always result from this process.

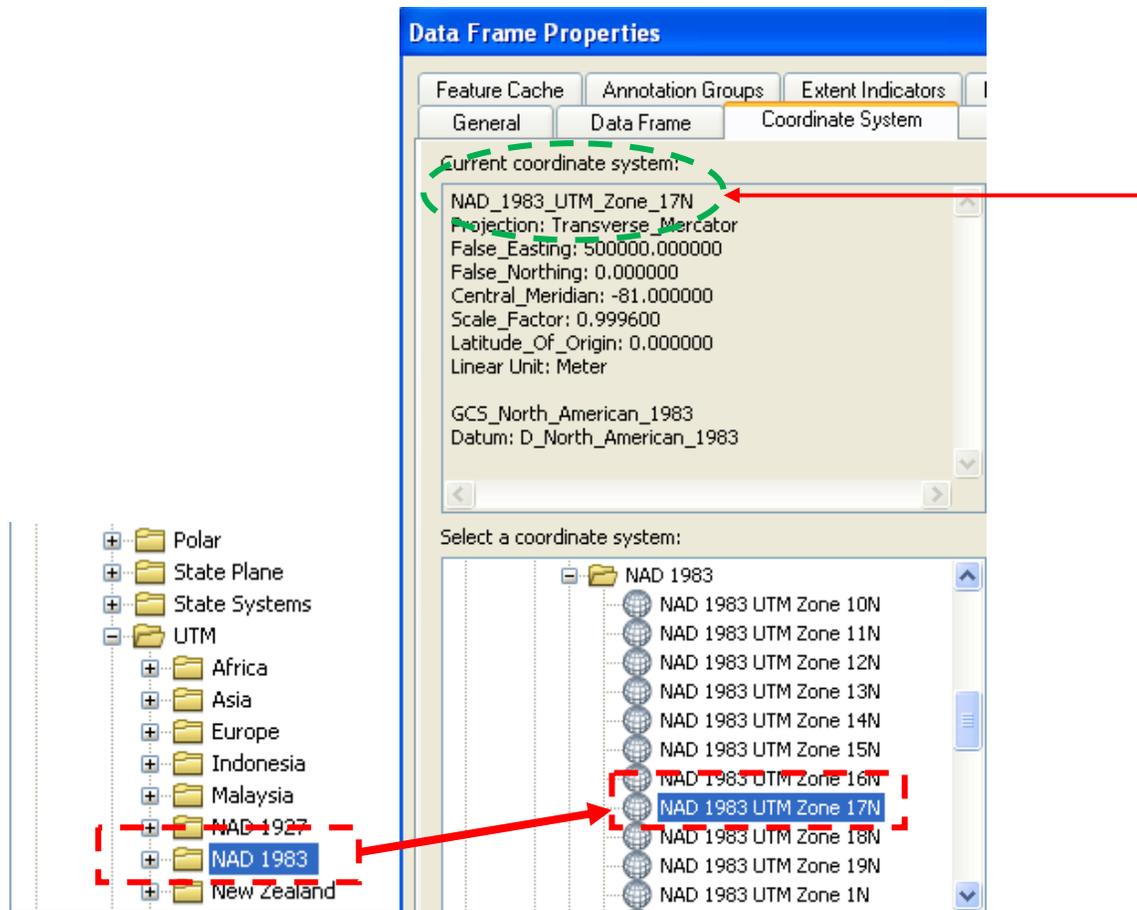
The City of Toronto is generally viewed using the UTM NAD (Universal Transverse Mercator North American Datum) 1983 zone 17 N projection. The following steps will outline how to correctly project the data.

Step 1: Open ArcMap by clicking on the Windows → All Programs → Applications → ArcGis → ArcMap.

Step 2: Once ArcMap is open *click* on the view tab and then *click* on data frame properties.

Step 3: *Click* the **Projected Coordinate Systems** → *Click* **UTM** → *Click* **NAD 1983** → *Click* **NAD 1983 UTM Zone 17N**.



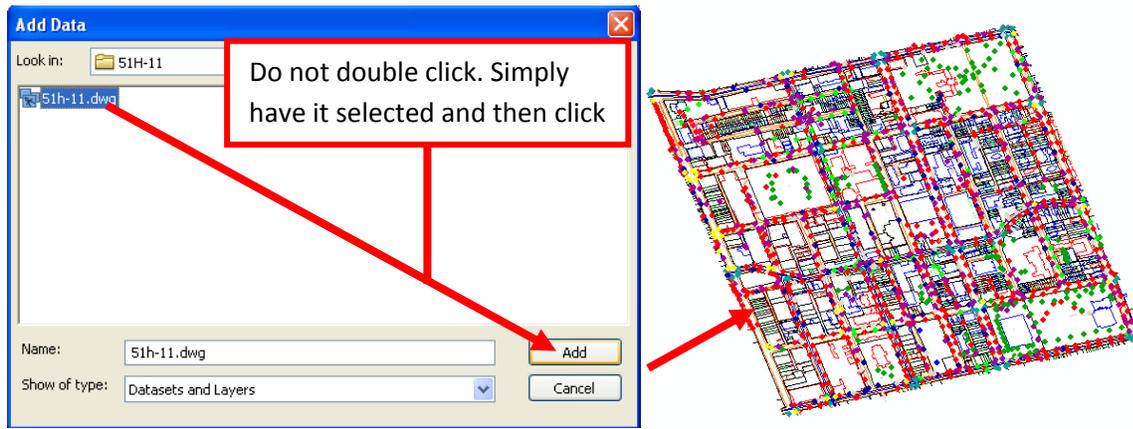


Note: To double check that the projection is set by closing and re-opening the data frame properties. The coordinate system should list NAD 1983 UTM Zone 17N.

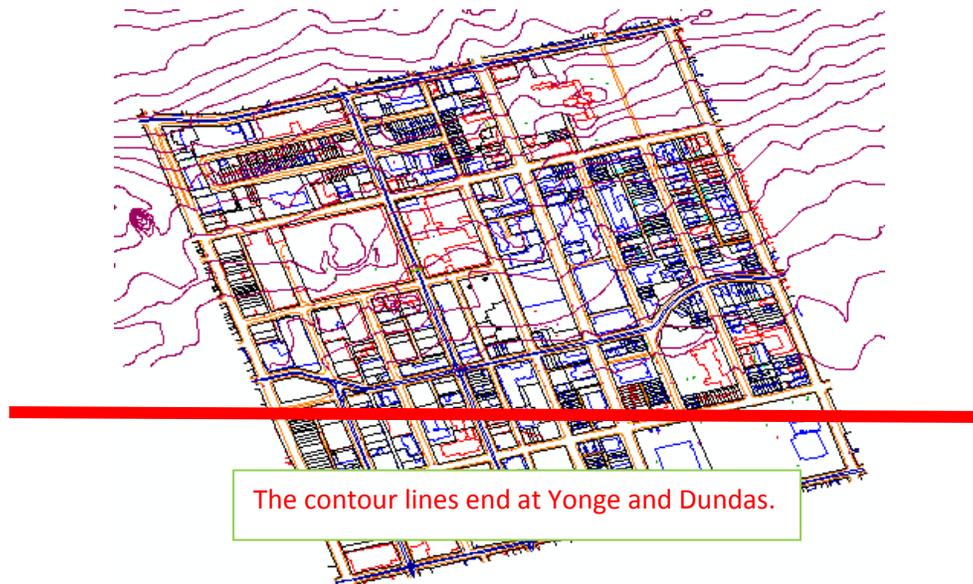
Section D

Co-Displaying Property Data Maps (PDM) with the City of Toronto Contours

Step 1: Use the 'Add Data' button (located at the top – black plus symbol with yellow diamond back ground) to add the PDM. When adding the file you will see the different attributes such as “polyline” and “multipatch” files in the “+” drop down. When adding the data **Do not double click the “51h-11” file**, just click it once to select it and then click add data. Once you have added your property data map, right click the added file and click on *zoom to layer*. This should result in the image below.



Step 2: Add the contour shape file following the same process as above.

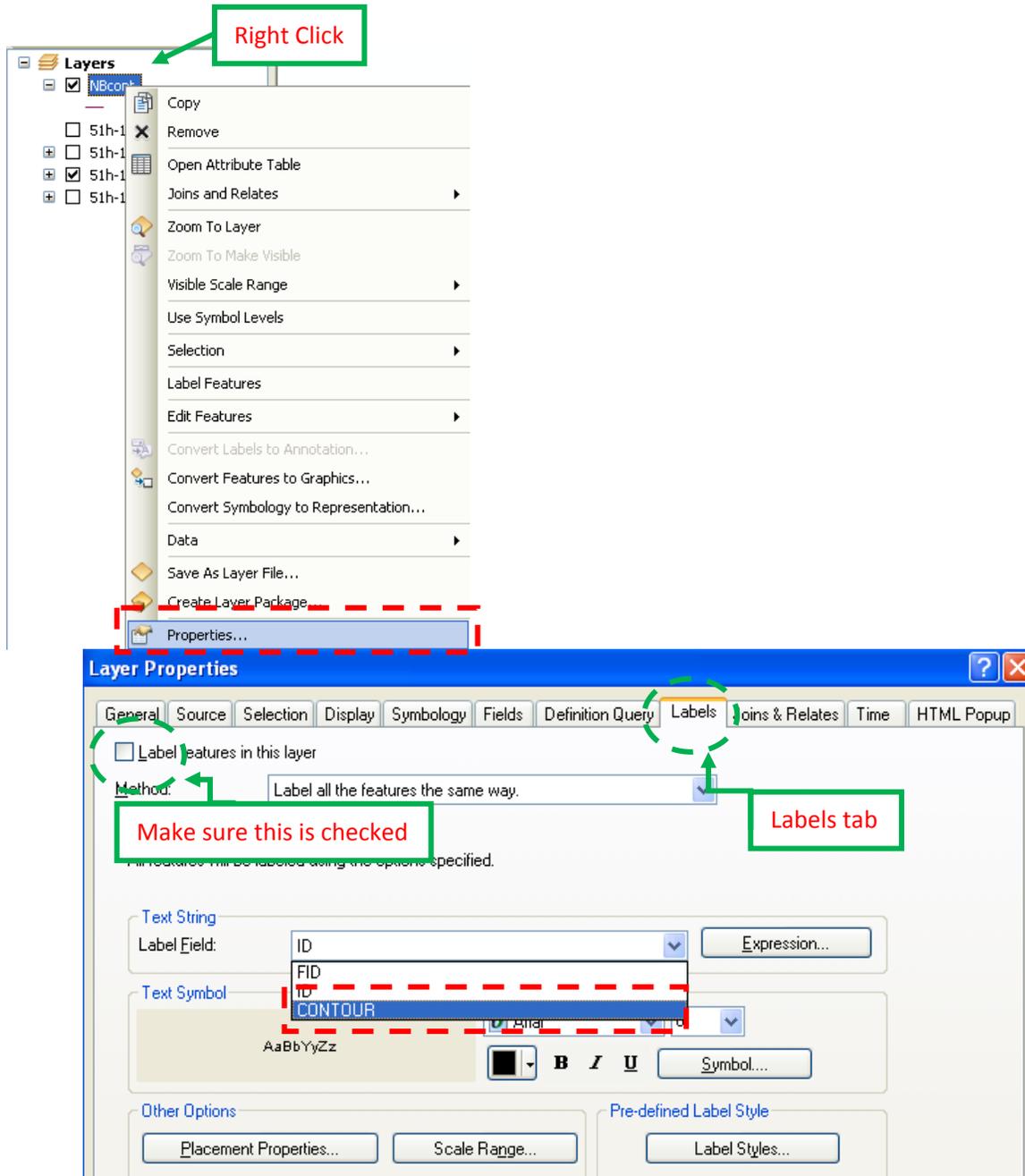


Note: It is important to note that the contours do not cover the entire property data map. As you see they end at Yonge and Dundas. In order to cover the entire property data map you will have to download one more contour file called **ND** and follow Steps 1 and 2.

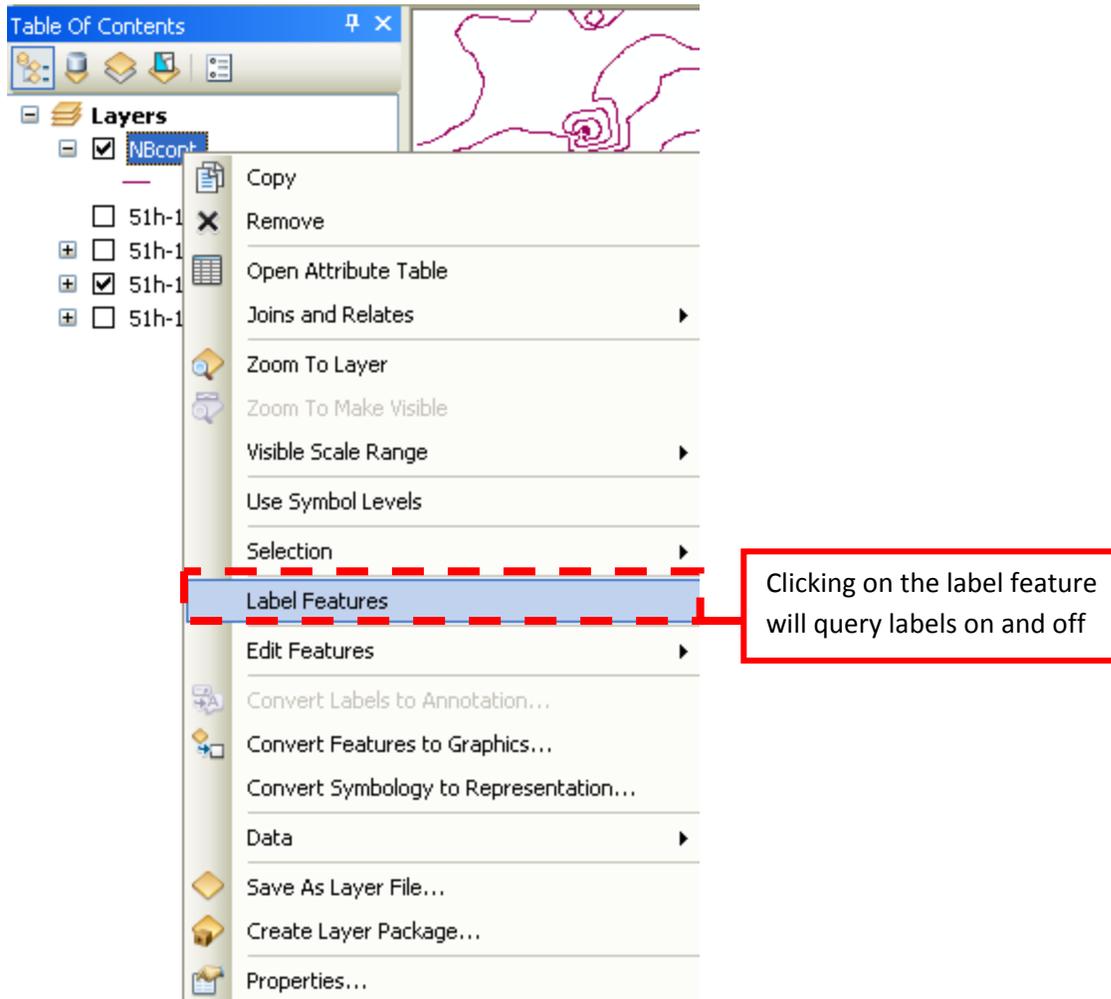
Section E Labeling Contours

Labeling contours is a simple procedure.

Step 1: To ensure that the contours labels are properly displaying, Right *click* on the contour file and *click* on **Properties**. Inside properties, make sure you are on the **Labels** Tab and that “Label features in this layer” is checked. In the drop down bar labeled **Label Field**, select “Contour”. Then *click* ok.



Note: Once labels have been set they can be turned on and off by *right clicking* on the contour file “NBcont” and then left *clicking* on **Label Features**.

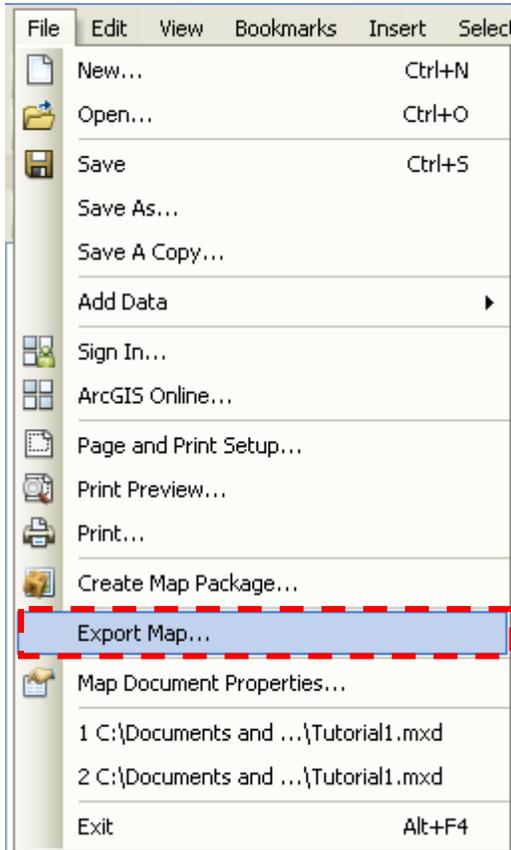


The numbers that appear on the contours is the elevation data and indicate the height from sea level in meters.

Note: ArcMap randomly assigns colours to the contour lines when the data was imported. It can be easily changed by double clicking on the line or going to **Properties** → **Symbology** within the file.

Section F Exporting to AutoCAD (DWG)

Step 1: Once you have completed all the previous steps you will want to export your map. Click on **File → Export Map**, then in the drop down bar in “file types” select Adobe Illustrator (also known as AI file). If this does not work you can also export it as a PDF.



The drop down bar gives you many export options, however chose AI or PDF file types

Step 2: Once you have exported your map as an AI file (or PDF), open it with Adobe Illustrator. Once you have opened it, repeat the export procedure within that program, however this time in the drop down select “**DWG**” as the file type. DWG is recognized by AutoCAD. Once you have exported the file, you can open it within AutoCAD and you are done.