

## How to export and convert Seattle-area GIS data to CAD

Questions? Contact [gis@lib.u.washington.edu](mailto:gis@lib.u.washington.edu)

To make a map of your project area, you will:

1. Get started
2. Prepare to "Clip" the area that you want
3. Clip the area that you want to work with
4. Convert to CAD, take your work with you, and quit ArcMap
5. Or, take your work without converting to CAD first

This document will walk you through these steps in detail.

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### STEP 1. Get started

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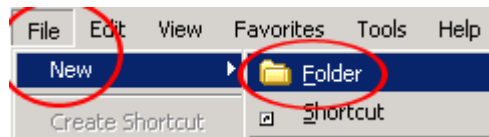
**1.1** Before you begin, you'll need to make a folder in which to store your work on this computer. Create a folder in **C:\Architecture\StudentWork** and give it **your name**.

#### Extra help: How do I create a folder?

Open the **C:\Architecture\StudentWork** folder. You can get started on this by double-clicking on **My Computer** on the desktop →



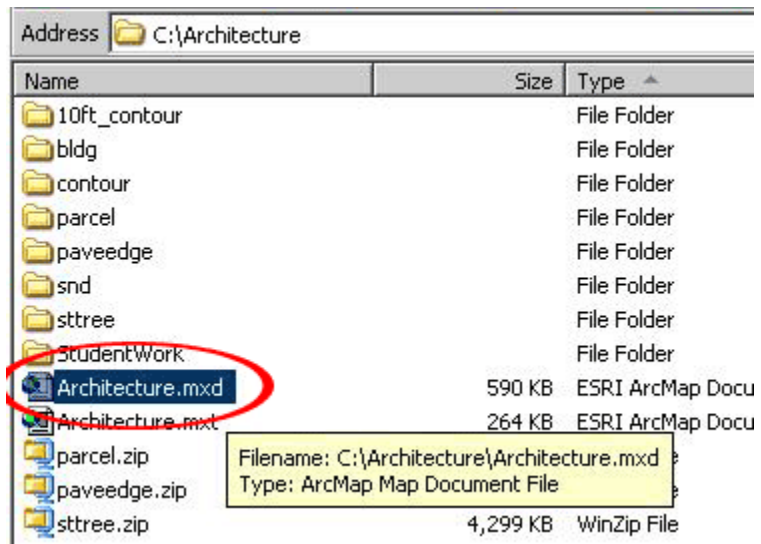
Once you are in the StudentWork folder, select File > **New** > **Folder** (see below).



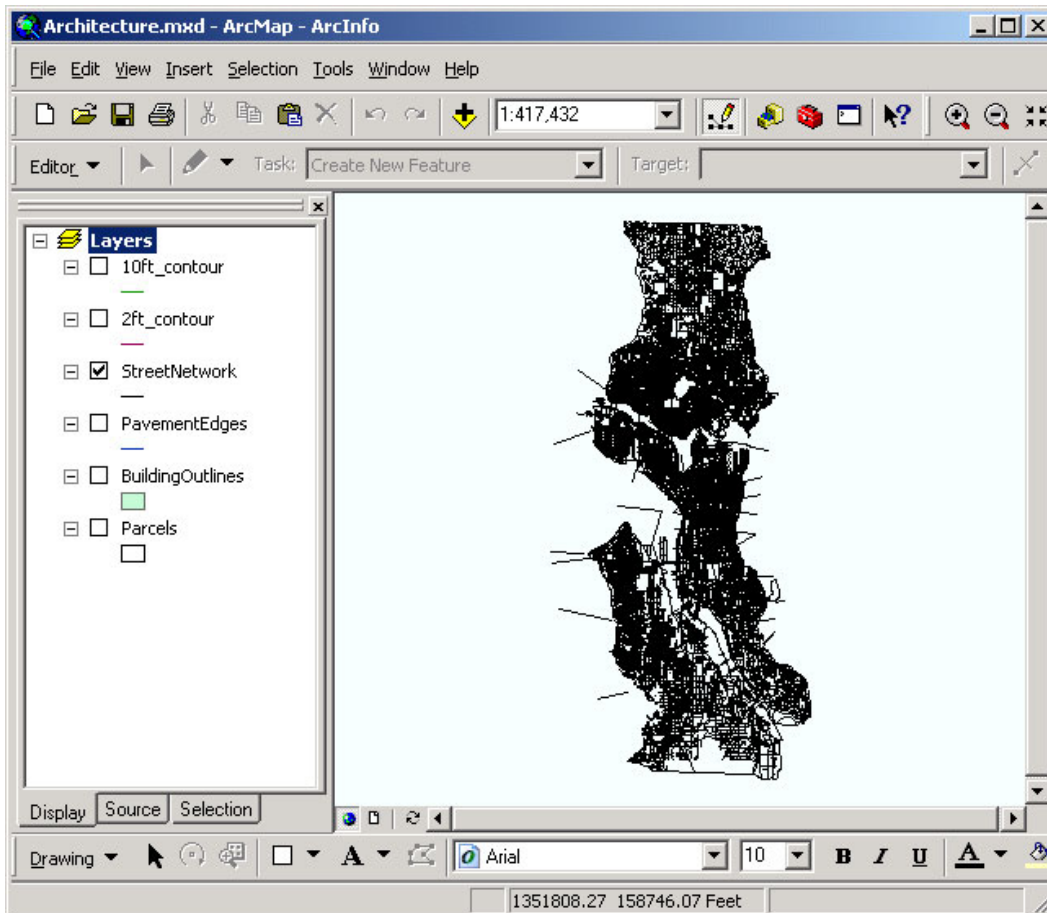
Type the folder name right away. Give the new folder **your name** or something equally meaningful to you.

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1.2 Open up the Seattle GIS data. To do so, double-click on **Architecture.mxd** (located at **C:\Architecture**). →



1.3 You should now be in ArcMap, looking at a copy of the Seattle data. The screen should look something like this:





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## STEP 2. Prepare to “Clip” the area that you want

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**2.1** Once you are looking at the Seattle data in ArcMap, you will need to navigate to the general area of the map that you are interested in. To do this, use the scroll bars (at the bottom and right of the screen), the **Zoom In** and **Zoom Out** tools, and the **Identify** tool.

To use the **Zoom** tools, click on the  (zoom in) or  (zoom out) button, then click on the area of the map that you want to center on. It will either zoom in or zoom out depending on which of the tools you picked, but the spot where you clicked will now be the center of the map. See below.



If you want to find out the name of features on the map, click the **Identify** tool (circled at right), then click the feature (street, etc.) for which you want a name. A small window with information about that feature will pop up. Close that window after you’ve read the information.

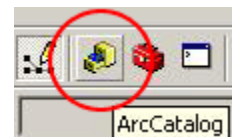


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**2.2** When you have finished centering and zooming so that you are looking at the general area you are interested in, you will prepare to “**Clip**” out the specific area you want to work with. Clipping is like using a cookie cutter to cut a shape out of dough (or like using the “Crop” tool in Photoshop).

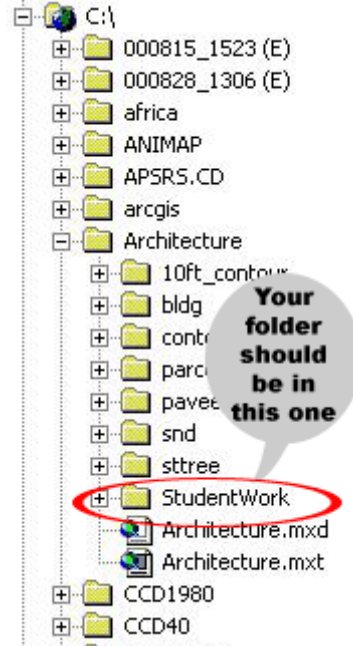
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**2.3** To begin the “Clip” process, open up **ArcCatalog**. This is a different program, but you can get to it by clicking a button within ArcMap. →



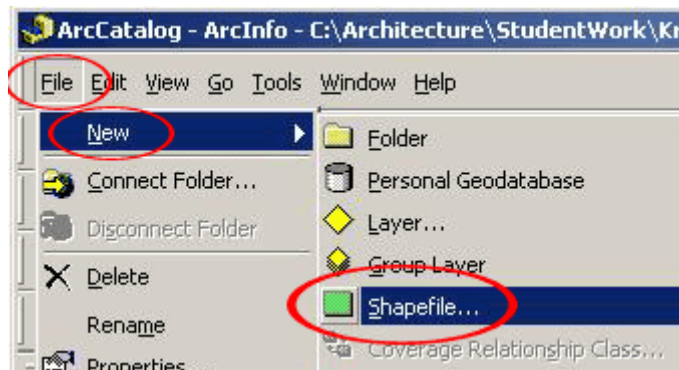
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2.4 Once ArcCatalog is open, use the left side of the ArcCatalog window to browse to “your” folder (the one you created in step 1.1). →

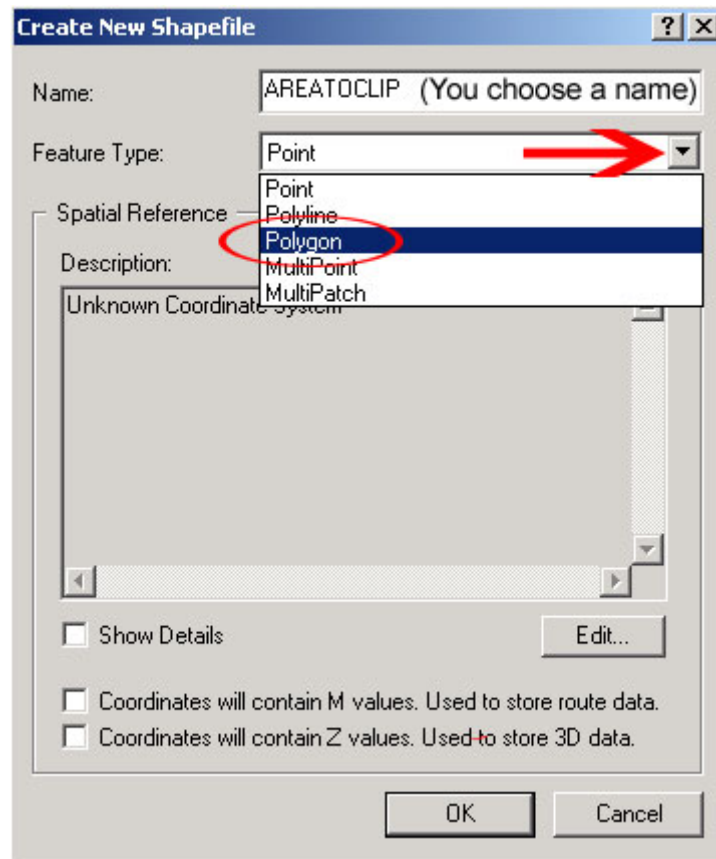


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2.5 When your folder is clicked so that it is open, go to the **File** menu at the top of the ArcCatalog window, and select **New > Shapefile...** See below.



**2.6** A new window will pop up. In this window, type a name for your new shapefile. This shapefile will define the area that you want to clip. Name it something that you'll remember (you'll use this in a future step) using ALL CAPS. Click on the **Feature Type:** drop-down box and choose **Polygon**. Click **OK**. You should now have a blank shapefile (.shp file) visible.



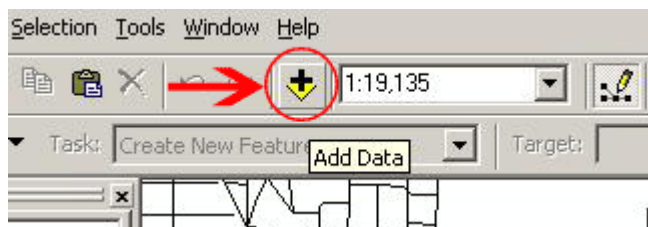
**2.7** You will now add this .shp file to the Seattle data in ArcMap. To begin, minimize ArcCatalog and return to ArcMap.

**Extra help: How do I minimize ArcCatalog?**

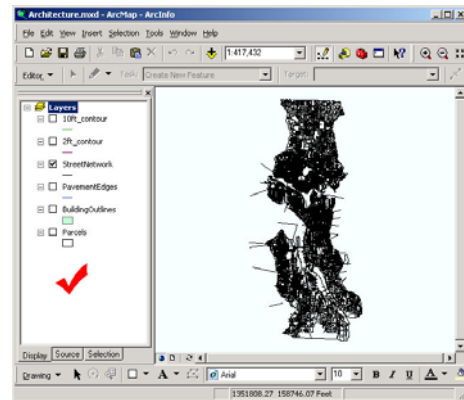
To minimize a program, look in the upper right-hand corner of the window and click on the circled button →



**2.8** Back in ArcMap, click the **Add Data** button. →

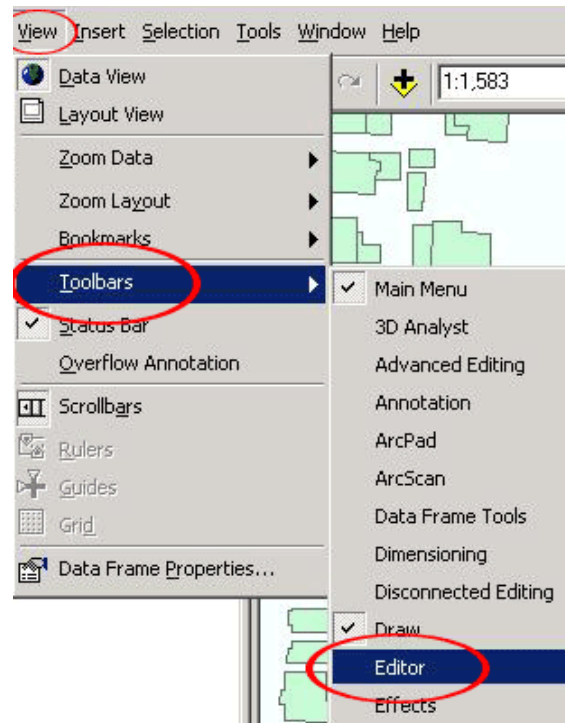


2.9 Browse to the .shp file you created in steps 2.5 and 2.6. If your file isn't showing, you'll need to double-click on **C:\** then **Architecture** then **StudentWork** then **your folder**. Select the .shp file by clicking on it once, then click the **Add** button. The .shp file and label you gave it will show up in the left side of the ArcMap window (the area with the checkmark in the image here) →

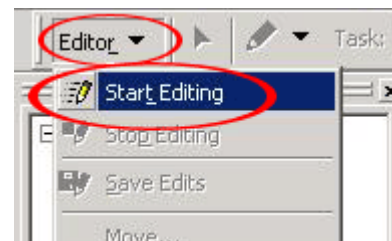


2.10 You are now going to edit your .shp file using the editor toolbar. Go to the **View** menu, select **Toolbars** and see if **Editor** has a checkmark next to it. →

- If it does not have a checkmark, select it so that it does.
- If it already has a checkmark, you're ready to edit. Simply click anywhere outside of the drop-down menu.



2.11 Click **Editor** and select **Start Editing** from the drop-down menu that appears. →

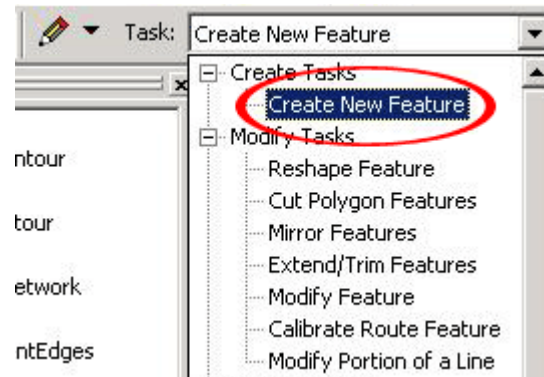


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**2.12** Highlight the path to your folder (the one you created in step 1.1) and click **OK**. This puts you in the **Editing** mode, which gives you access to new tools.

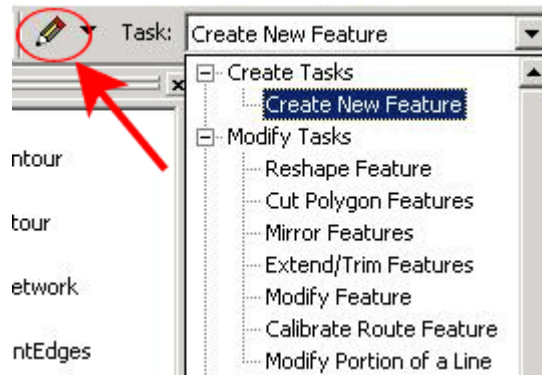
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**2.13** From the **Task** dropdown box, select **Create New Feature**. →

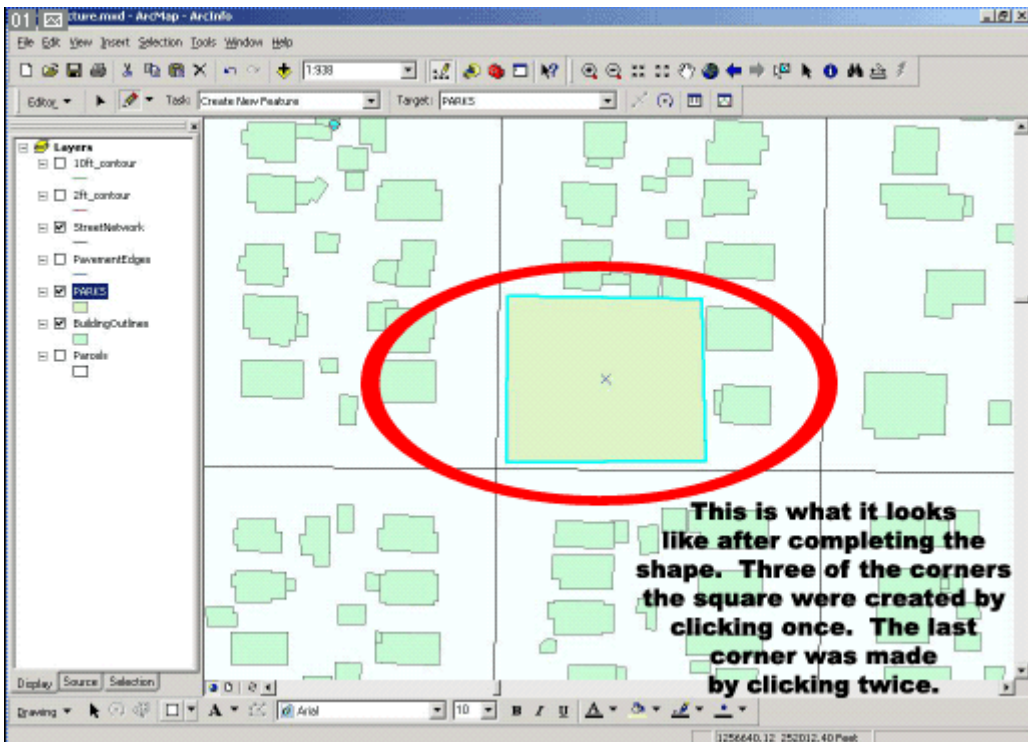
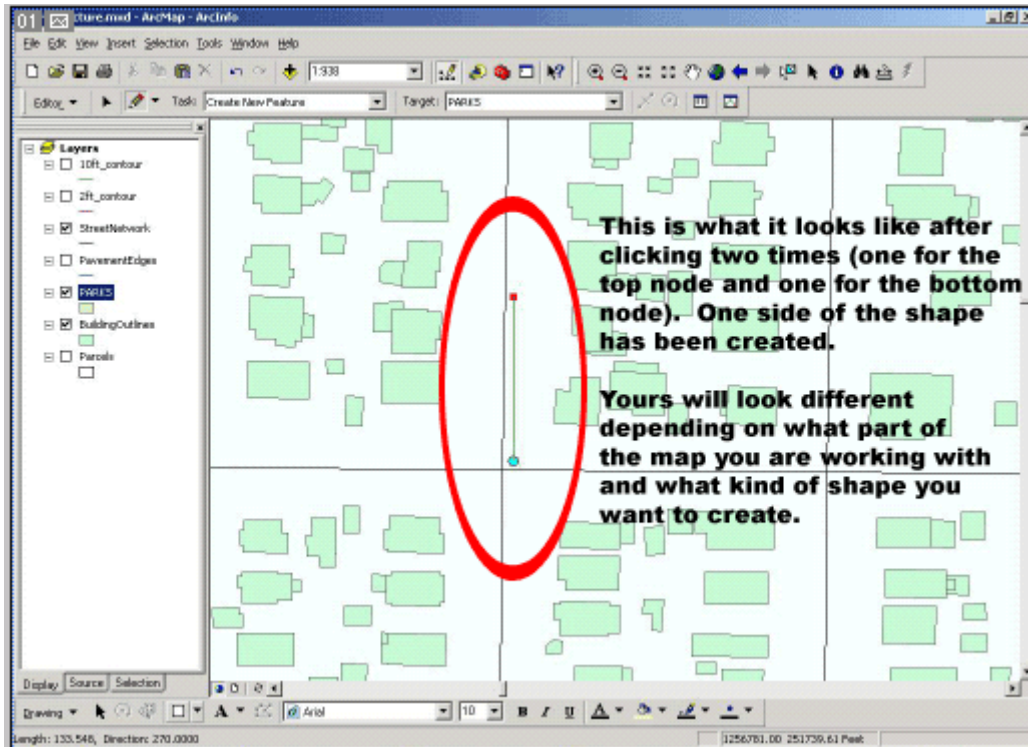


**2.14** Click the **Sketch Tool** (the pencil button to the left of the dropdown box). →

When you hover over the map using this tool, the cursor will turn into a different shape. It will look something like this: 



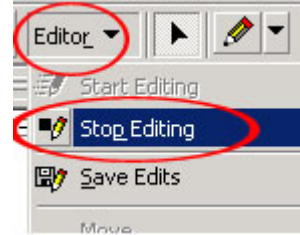
**2.15** You will use this tool to “draw” the area that you want to clip. You are making a cookie cutter, so to speak. Each time you use this tool to click on the map, you will create one node of the shape you want to create. Double-clicking will indicate that this is the last node you want, and the software will create the shape for you. You can make any shape you want, and click as many times you want, before you double-click to create the shape. See the two images on page 8 for more explanation.





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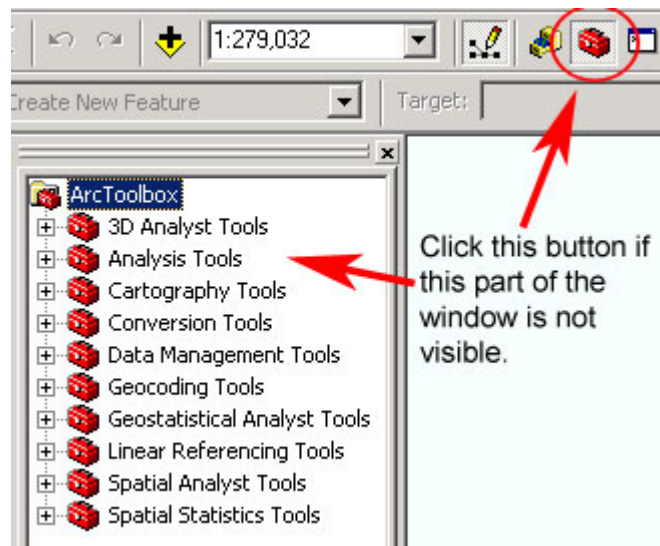
**2.16** Once you are happy with the shape you created, go back to the **Editor** drop-down button, click on it and select **Stop Editing**. You will be asked if you want to save your edits. Click **Yes**.



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### STEP 3. Clip the area that you want to work with

**3.1** Make sure the ArcToolbox window is showing. If it's not, click the **ArcToolbox** button to make it appear.



*Next page: Step 3.2 >>*

3.2 Click on the + icon to the left of **Analysis Tools**. New options should appear. Next, click the + icon to the left of **Extract** and more options should appear. Last, double-click on the **Clip** option (or the hammer icon next to it). See below.



*Next page: Step 3.3 >>*

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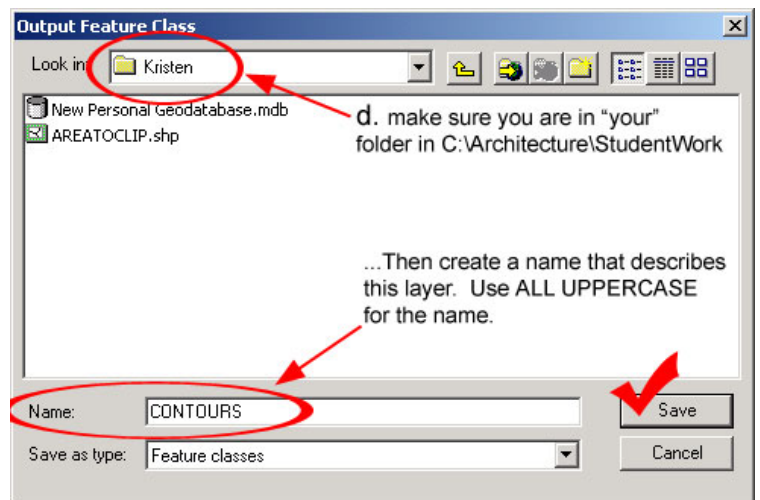
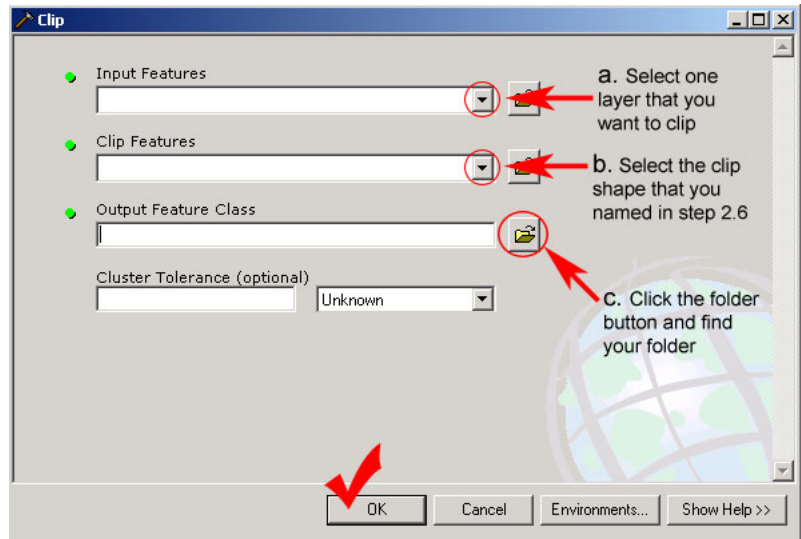
**3.3** A new window will pop up – this is a “wizard” to help you with the **Clip** operation. You’ll go through this wizard process once for each layer you’d like to incorporate into your clipped area. To fill out this wizard, follow these four steps (see the images below too).

**a.** In the **Input Features** box, select one layer that you’d like to clip. You can do this with either the drop-down arrow or the navigate folder button.

**b.** In the **Clip Features** box, select the **shapefile** that you named in step 2.6.

**c.** In the **Output Feature Class** box, click the folder button and find your folder (the one you created in step 1.1). A new window will open.

**d.** In this new window (pictured at right), navigate to “your” folder in **C:\Architecture\StudentWork**. Then create a name that describes this layer. Type the name in ALL UPPERCASE LETTERS. When you click **Save**, you’ll be sent back to the first window (above). Click **OK** in that window.



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**3.4** Repeat step 3.3 for each layer you’d like to include in the area you are clipping (e.g. contours, streets, etc.). Once you’ve finished that, you’re done clipping your area!

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**To finish your work, you'll do either step 4 or step 5:**

If you want to convert your clipped area to CAD, go to **step 4** on page 13 to finish your work. (You can then skip step 5.)

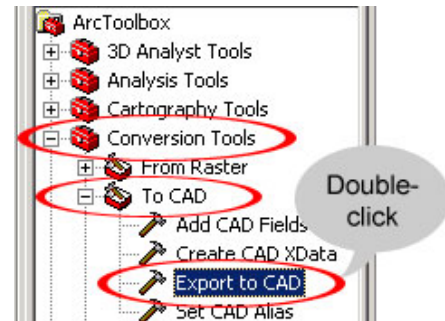
If you do *not* want to convert to CAD, skip step 4 and go straight to **step 5 on page 15**. (This step will explain how to take the data and map with you so you can work on it in a GIS program elsewhere.)

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## STEP 4. Convert to CAD, take your work with you, and quit ArcMap

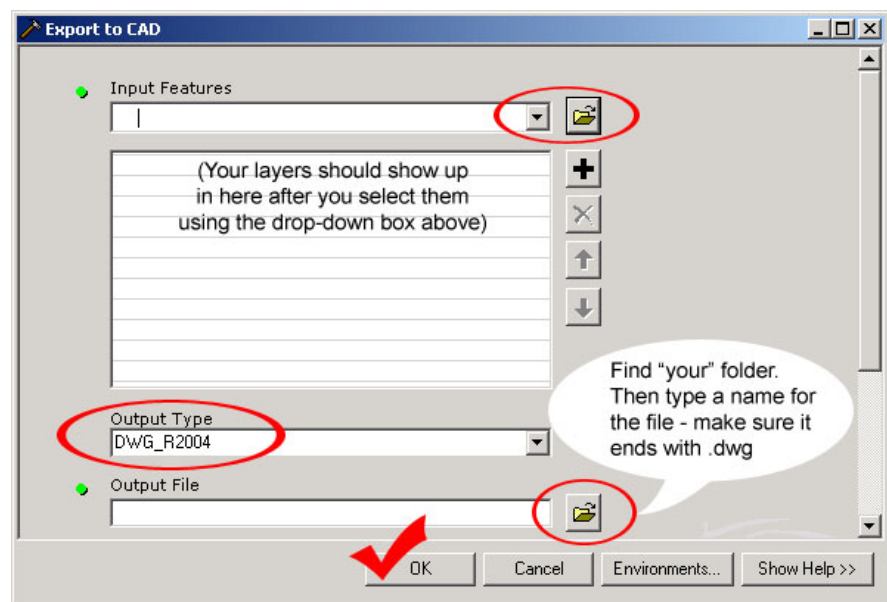
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**4.1** In the ArcToolbox, click on the + symbol next to **Conversion Tools**. Then click on the + symbol next to **To CAD**. Last, double click on **Export to CAD**. →



**4.2** A window will pop up. Use the **Input Features** drop-down box (or the folder button) to select one of the layers that you clipped. It should appear in the large lined box. Do this for each layer that you clipped. Your layers should be the ones in ALL CAPS.

Next, choose an appropriate **Output Type** (DWG\_R2004 will work).



Finally, click the folder button next to the **Output File** box. A new window will pop up. Find “your” folder for the **Save In** box at the top of the window. Then type a name for the exported CAD file in the **File Name** box. Make sure the name ends with .dwg.

**4.3** Your CAD file should be exported to your folder located within **C:\Architecture\StudentWork** (this is the same folder that you created in step 1.1). You should be able to open this file using AutoCAD. To transfer this file to another computer, your options include:

- Storing your files on your Dante account (use SSH FTP) or e-mailing them to yourself
- Putting them on a jump drive

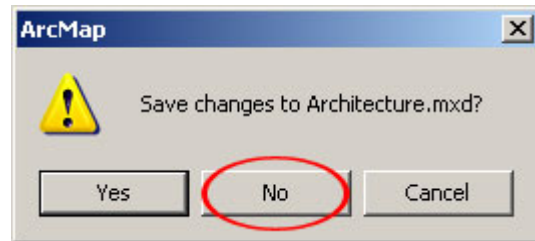
- Burning them to CD

Let us know if you need help doing any of these!

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**4.3** Once you have converted your files to CAD, you can quit the ArcMap program. Go to the **File** menu and choose **Exit**. Do **NOT** save changes. →

*You're done!*



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## STEP 5: Take your work with you and quit ArcMap

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**5.1** To take your map and all the associated data with you, you will need to copy the folder that contains all the files you have created (this is the same folder that you created in step 1.1) and transfer it to another computer.

Your options include:

- Storing your files on your Dante account (use SSH FTP) or e-mailing them to yourself
- Putting them on a jump drive
- Burning them to CD

Let us know if you need help doing any of these! **Make sure to copy your data before you quit ArcMap.**

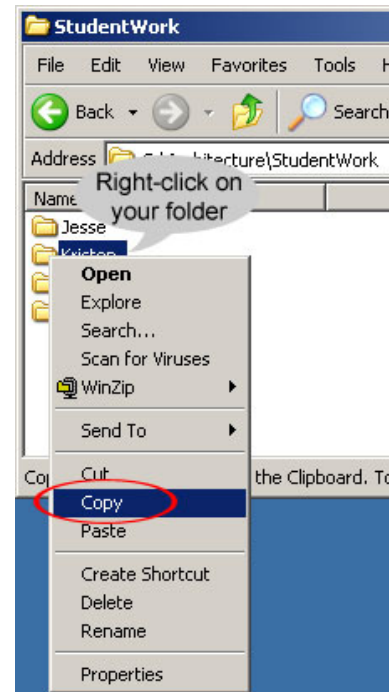
### **Extra help: How do I copy a folder?**

Open the **C:\Architecture\StudentWork** folder. You can get started on this by double-clicking on **My Computer** on the desktop →



Find the folder you want to copy (the folder you created in step 1.1). Use the button on the right side of your mouse to right-click on the folder. Leave the mouse clicked, and select "Copy." →

To paste the folder, go to the location where you want to place it (such as in your Dante account, or on a disk). Right-click again, and choose "Paste."



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**5.2** Once you have copied the folder with your work on it and pasted it somewhere else, you can quit the ArcMap program. Go to the **File** menu and choose **Exit**. Do **NOT** save changes. →

*You're done!*

