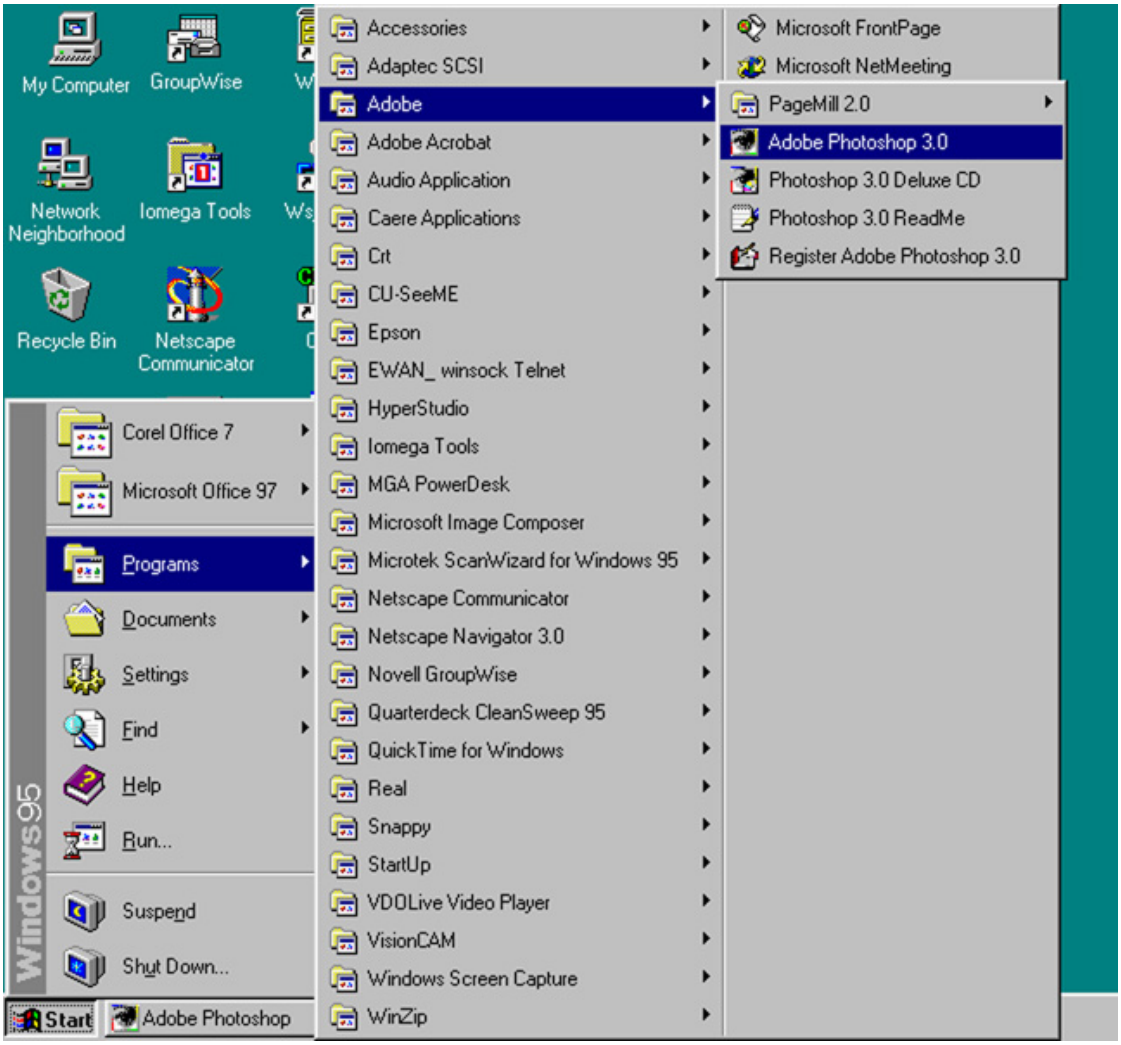
Scanning in Graphics For the Internet

Contents:

Step 1

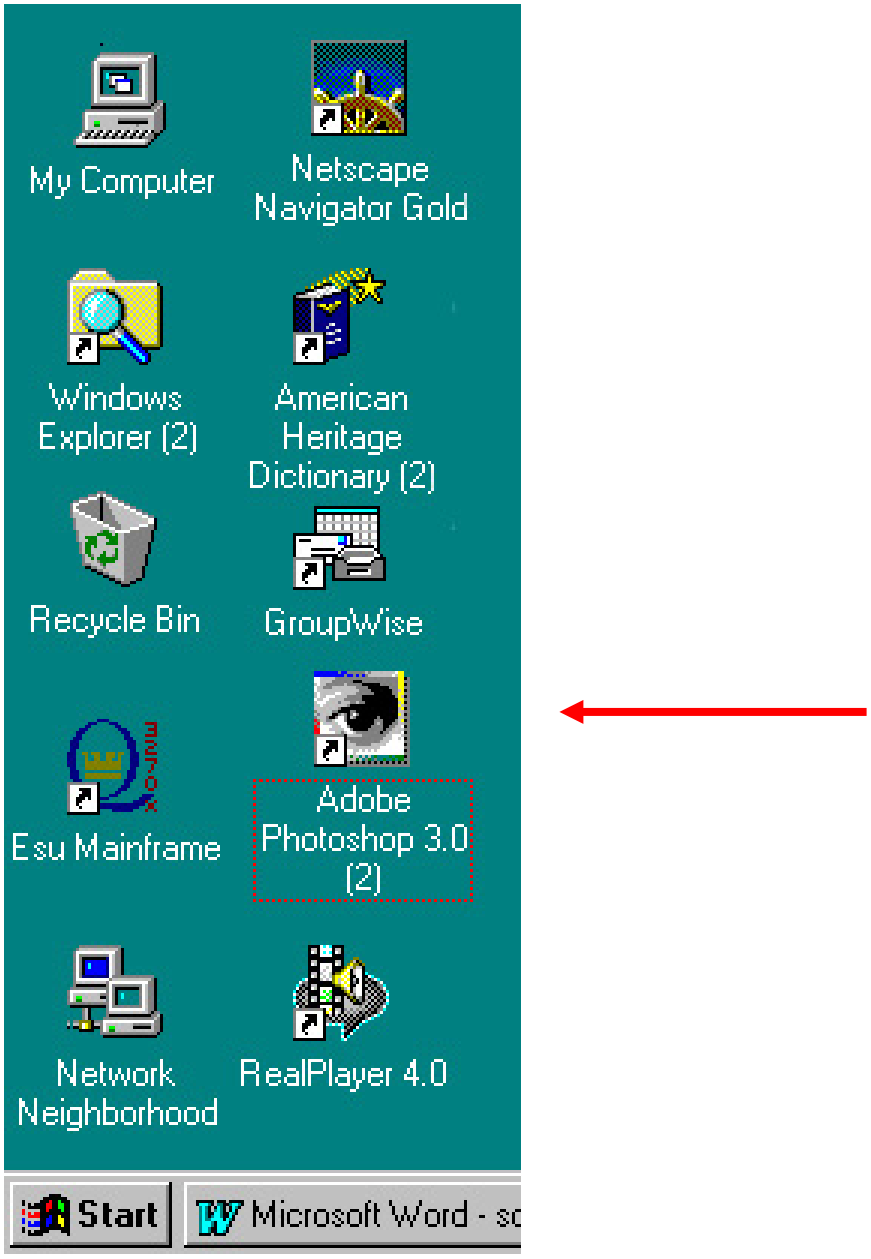
1. On the Windows95 desktop screen, click on the **Start** button at the bottom of the screen

2. Move the mouse pointer upward until the **Programs** word is highlighted, then go over to the **Adobe Folder** until it is highlighted, slide the mouse over until **Photoshop 3.0** is highlight and click on it. Adobe Photoshop 3.0 should open up on your screen.



OR

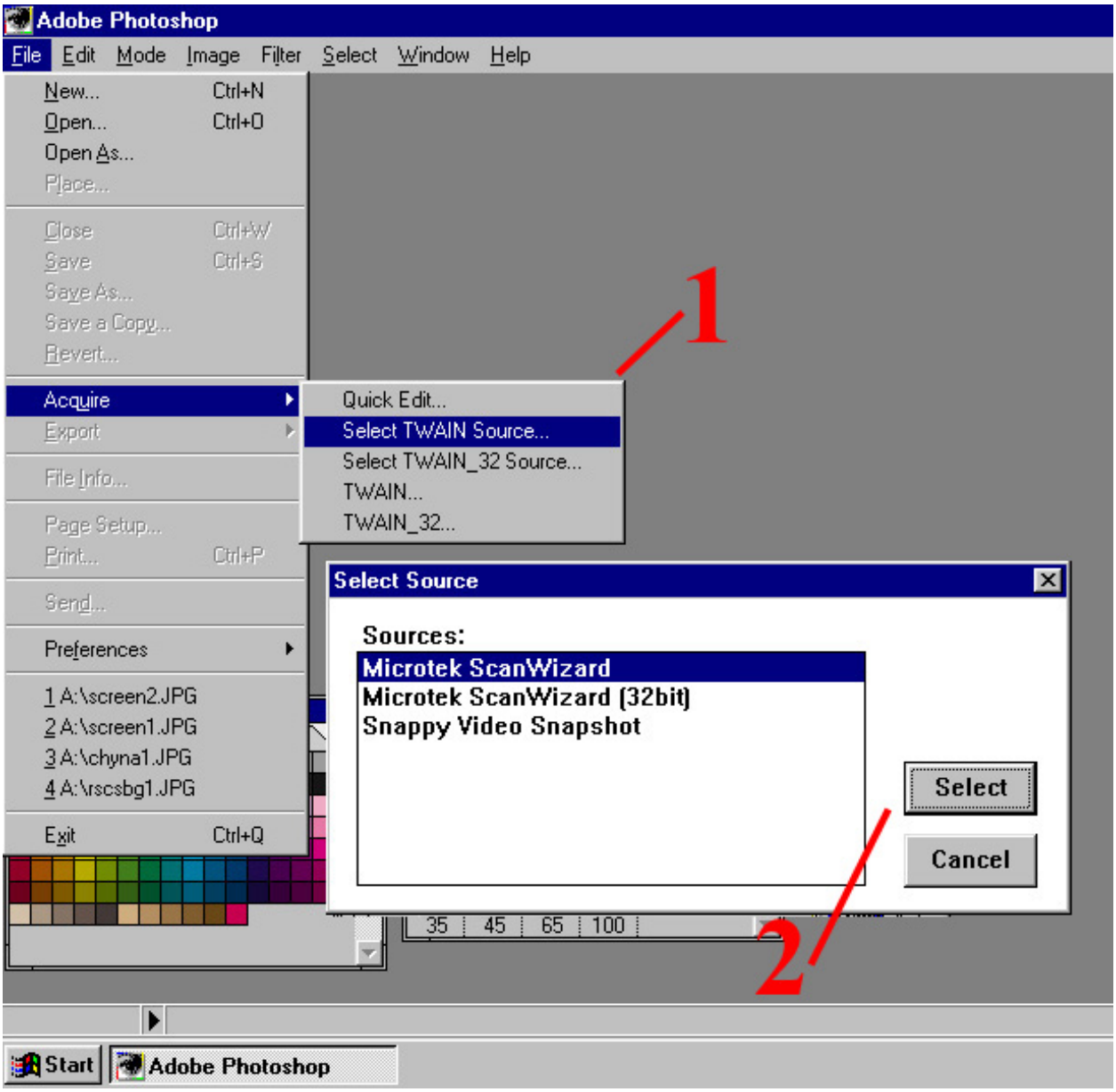
Double click on the **Photoshop Icon** on the window's desktop.



Step 2

1. On the **Menu bar** in Photoshop, select **File - Acquire - Select Twain Source**

2. Click on the **Microtek ScanWizard** in the pop up box so it is highlighted and click the **Select** button



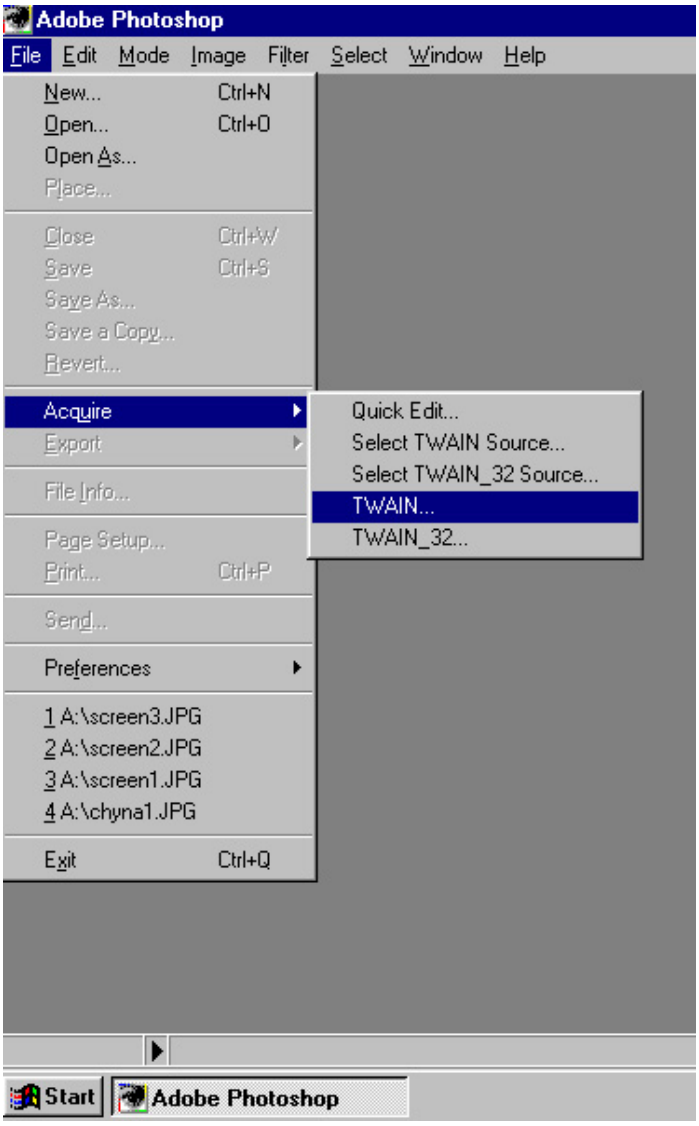
3. Go back to the **Menu bar**, select **File - Acquire - Twain**

4. The Microtek ScanWizard window should pop up

What is Twain?

An industry standard for software that controls optical input devices such as scanners, film recorders and video capture cards. Application programs that support Twain allow these devices to be controlled from inside an application like Adobe Photoshop, WordPerfect, MS Word, MS FrontPage, etc.

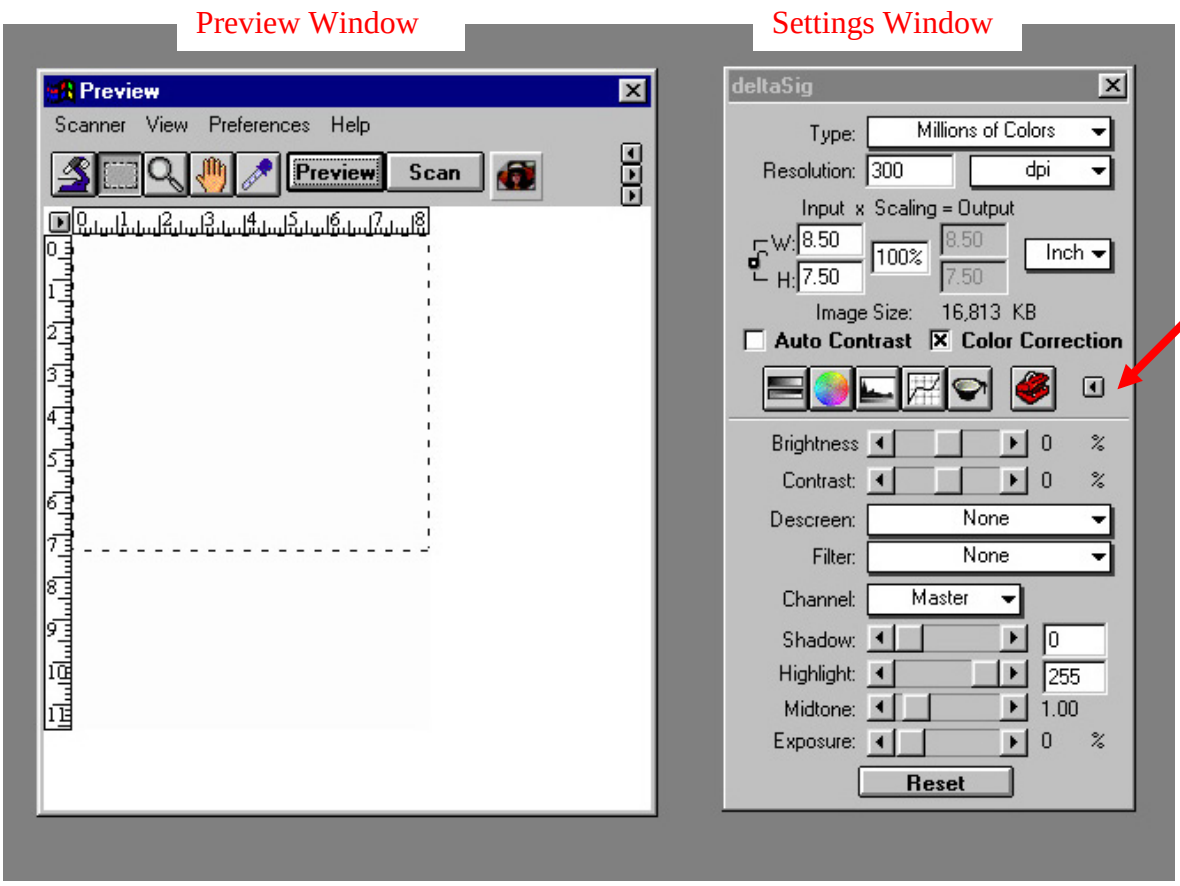
3



Step 3

1. The very first time that ScanWizard is started up, only the **Preview** and **Settings** windows will appear.

2. Click on the **small arrow** on the bottom right side of the **Settings** window to show more detail, like brightness/contrast settings, etc.



To see the other windows, go to **View** on the menu bar of the Preview window and choose the **Show** command
The four windows of ScanWizard are:

- ! The **Preview** window includes the various commands and tools for controlling the scanner
- ! The **Settings** window contains scanning commands for outputting the image and includes the image-enhancement tools of the program.
- ! The **Information** window provides information on the preview image, such as pixel and color information and it allows you to change zoom levels.
- ! The **Scan Job** window provides key functions in processing scan jobs

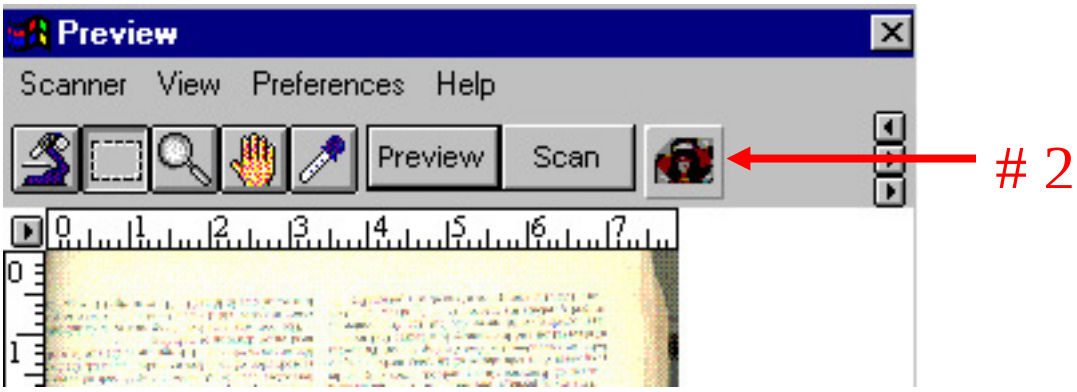
***** See Appendix – A for more details on the different windows *****

Step 4

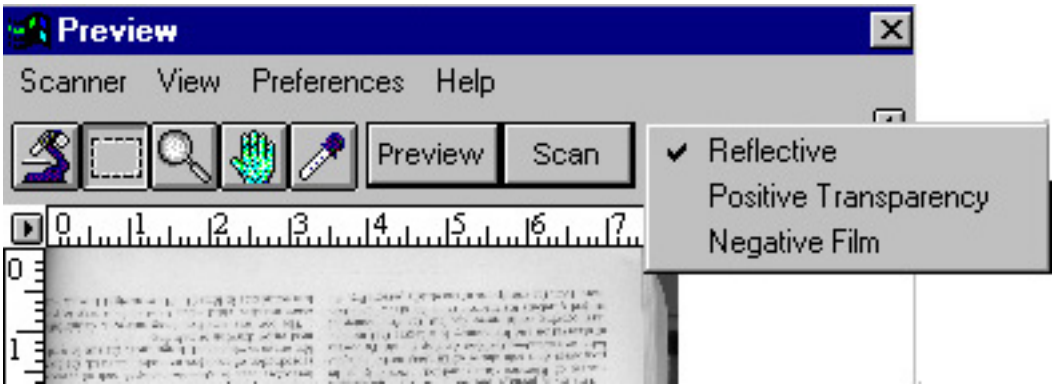
Preview your image, follow these steps to prescan:

1. Place the picture to be scanned at the bottom - left side of the scanner (next to the large red arrow on the glass of the scanner)

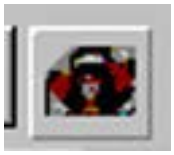
2. Select the type of image you are scanning by clicking on the **Scan Material** type button; located on the far right side of the tool bar in the **Preview** window.



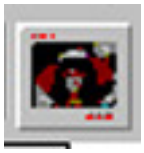
3. When you click on **Scan Material Icon,** the menu appears as shown below. Make your selection and click OK.



! The top choice **Reflective** is for scanning regular color / black & white pictures form prints, books, magazines, etc.

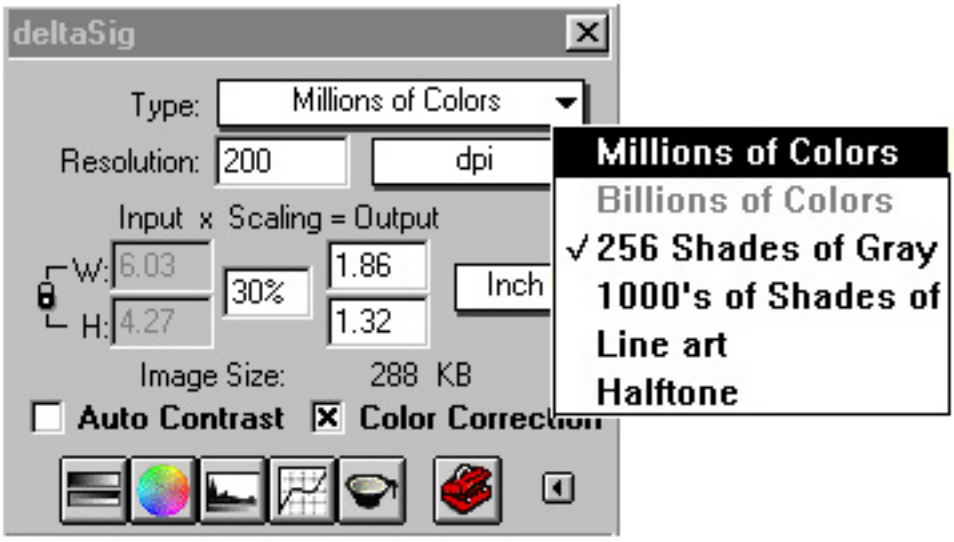


! The middle choice **Positive Transparency** is for scanning in 35mm slides, glass lantern slides, transparencies sheets, etc., basically, any material that is transparent. However your scanner must have a transparent Media adapter lid.



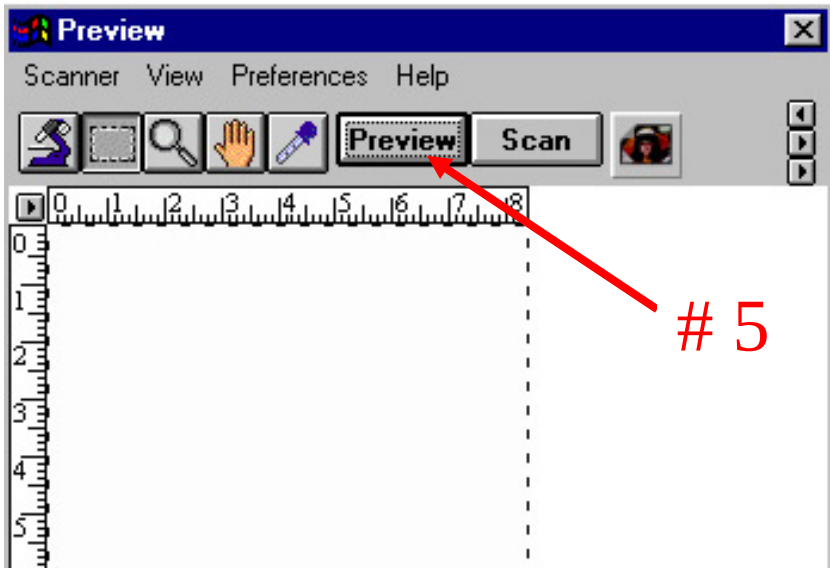
! The bottom choice **Negative Film** is for scanning in negative film strips

4. Select what **Type** the scanning material is and choose one of the following options.



- Millions of Color *Excellent for most things in color
- Billions of Colors
- 256 Shades of Gray *Excellent for most things in black/white
- 1000's of shades of Gray
- Line Art *Excellent for most things in black/white line drawing
- Halftone

5. Click the **Preview** button to display an image of the document being scanned



Step 5

Scanning

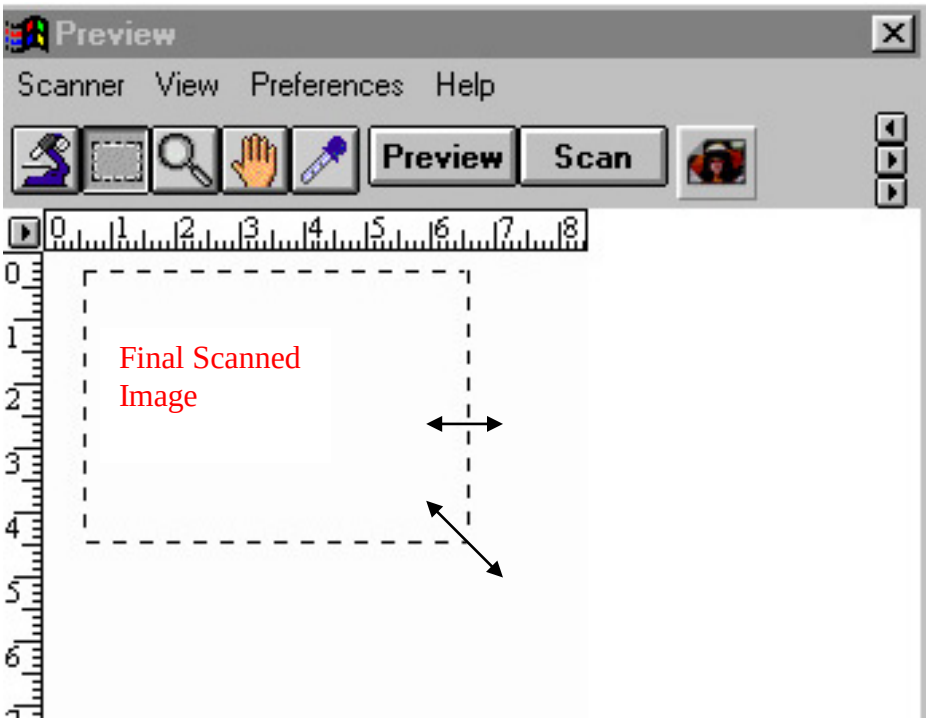
Now you are ready to do the final scan. Follow these steps:

1. Decide what the final output of the image is going to be displayed on:

! Computer Monitor (Presentations, Internet Web Pages, etc.)
! Television Monitor
! Paper handouts
! Transparency paper
! Etc.

**** SEE APPENDIX - B for more information**

2. Select the scanning area using the rectangular flashing line. Drag the mouse pointer over the dash lines, the mouse pointer changes to a line with the arrows on it. Drag the dashed lines around the image that you want to scan in. Anything in this flashing line box will be scanned as the final image!



3. In the **Settings** window set the **Resolution**

*** See APPENDIX - C for more information on Resolution**

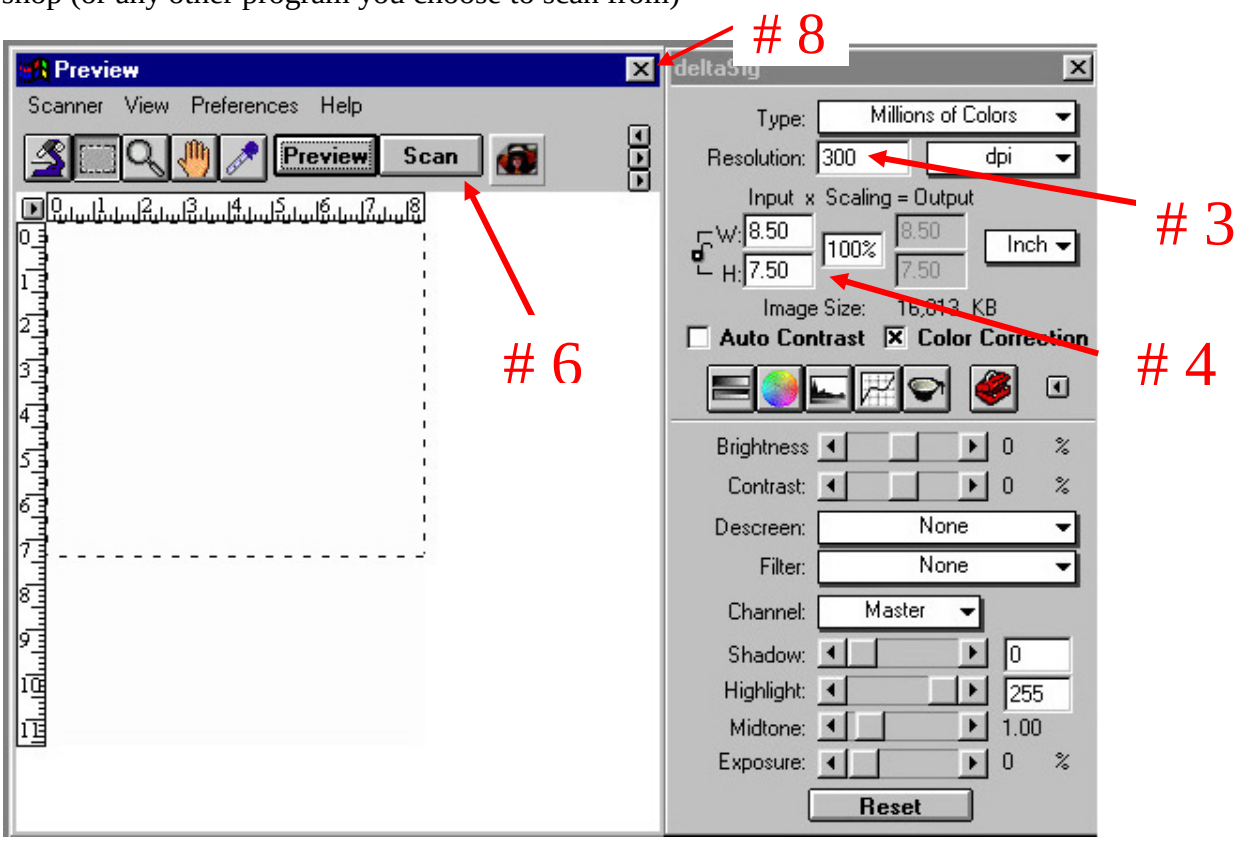
4. In the **Settings** window set **the Input x Scaling = Output**

*** See APPENDIX - D for more information on scaling**

5. Adjust any of the following optional image enhancement controls:
   - ! Brightness and Contrast
   - ! Descreen * will take out some of the little speckles
   - ! Filter *image effects: blur, sharpen, emboss
   - ! Shadow / Midtone / Highlight

6. Click on **Scan** to begin scanning with the current settings

7. Once you have scanned the final image the TWAIN software automatically transfers the image in Adobe Photoshop (or any other program you choose to scan from)



8. After the image is transferred into Photoshop, you must close out the ScanWizard Program and then you can manipulate the image in Photoshop. Click on the [X] in the upper right hand corner of the Preview Window screen (see # 8 above in red).

Step 6

1. Once the image is in Photoshop you can change a lot of things. Here are some basic things you can change:

A. To change the Image size (height / width and resolution)
Select on the **Menu bar**: **Image - Image Size - Image Settings box appears**
and type in the desired size.

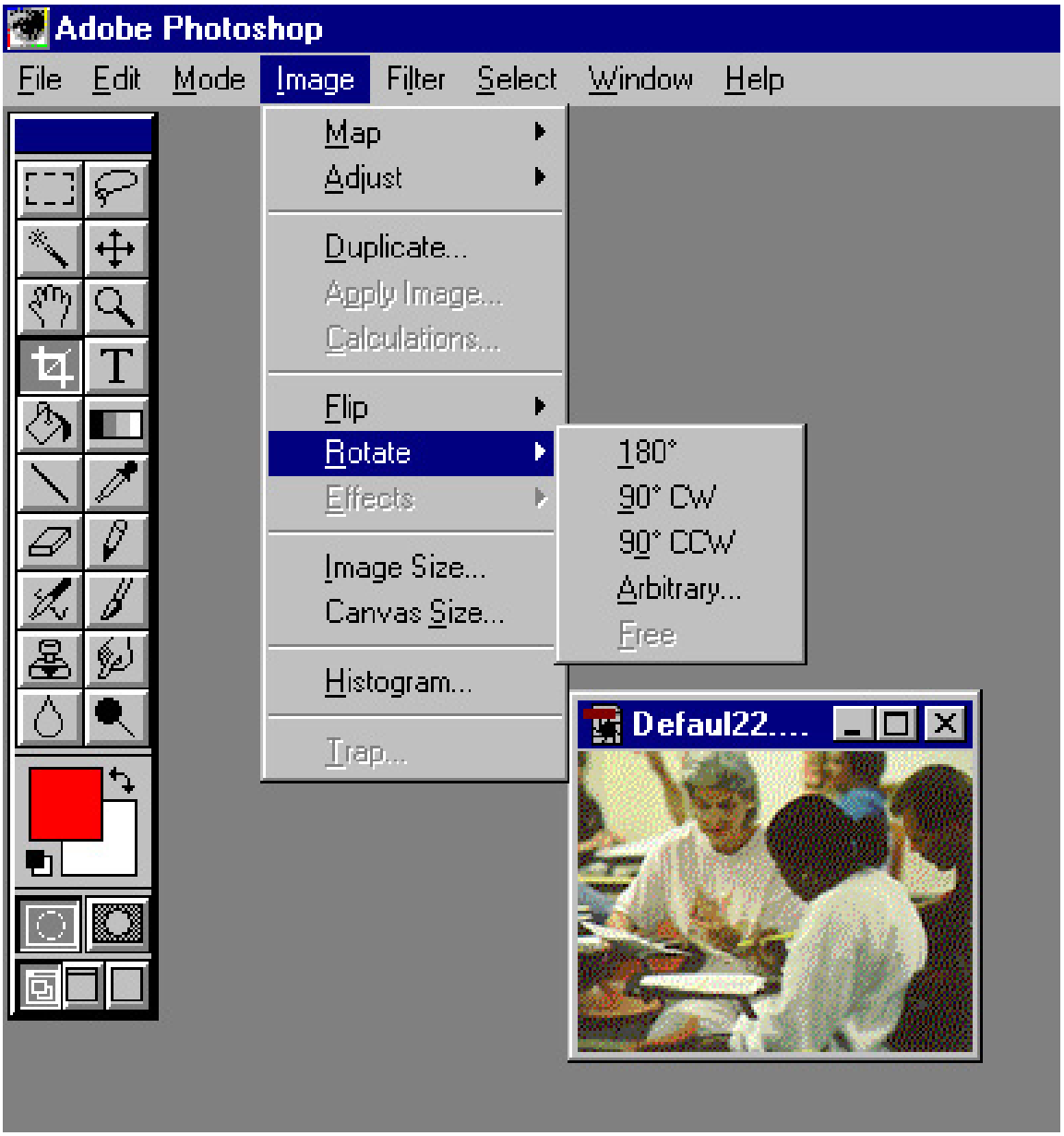
5

B. To change Brightness / Contrast level

Select on the **Menu bar**: **Image** – Adjust – Brightness **/ Contrast**

C. To change the view of the image

Select on the **Menu bar**: **Image** - **Flip or Rotate** to change of the view of the image



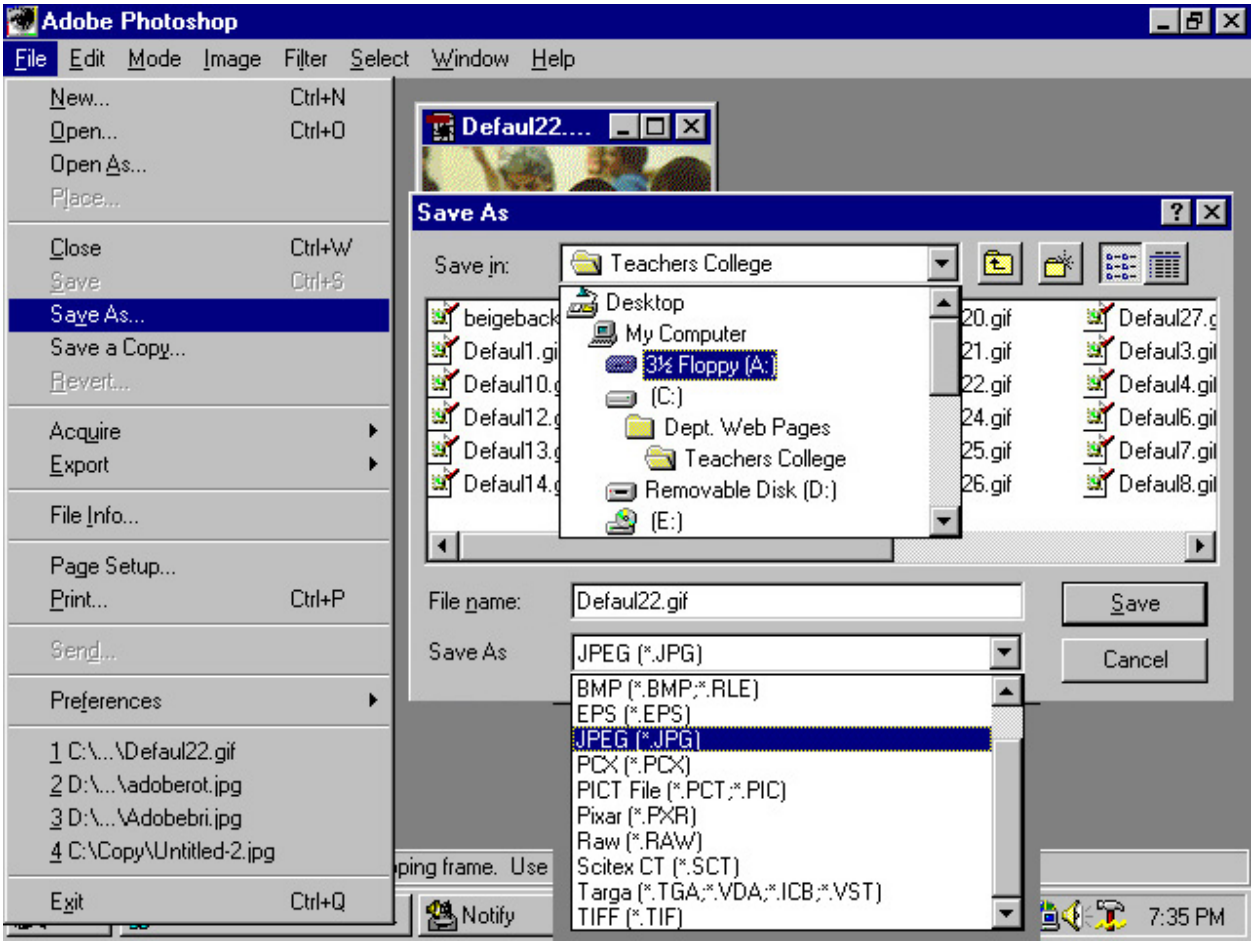
D. To save a file on to the hard drive or floppy drive, Select on the **Menu bar**: **File - Save as** :

In the **Save In** box, select the: Floppy drive (A), or a folder on the computer's hard drive, or on a network

File name: give the file a name
Save as: select the file format

If saving in JPEG, a box with the amount of compression will pop up on the screen, use the default and click on the **OK** button.

**** SEE APPENDIX - E for more information *****



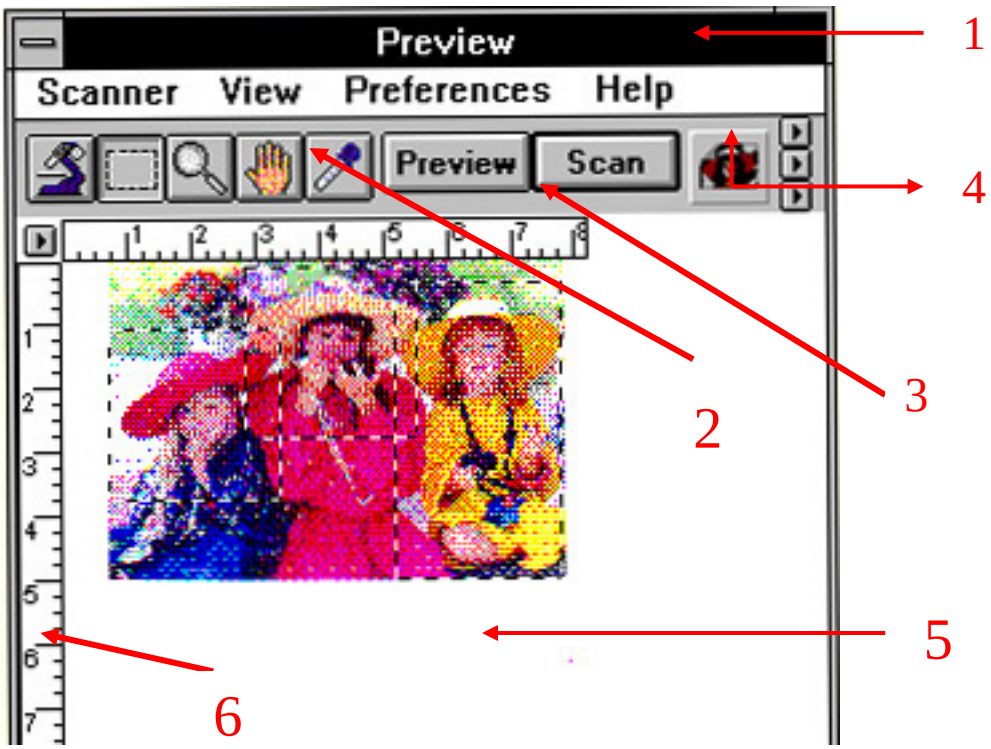
Step 7

To scan in another picture, start at the beginning with **Step 2**, and continue on. If you are finish exit Photoshop by selecting **File** on on the menu bar and select **Exit.**

Appendix - A

ScanWizard The Four Windows: Preview, Settings, Scan Job, Information

Preview Window



1. The **Menu Bar** includes the different menus relating to setting up the scanner (Scanner menu), controlling view options (View menu), and customizing the software (Preferences menu).

2. The **Tool buttons** simplify the performance of certain tasks. The Tool buttons are (left to right) Zoom Preview, Scan Frame, Magnifying Lens, Hand, and Color Picker.

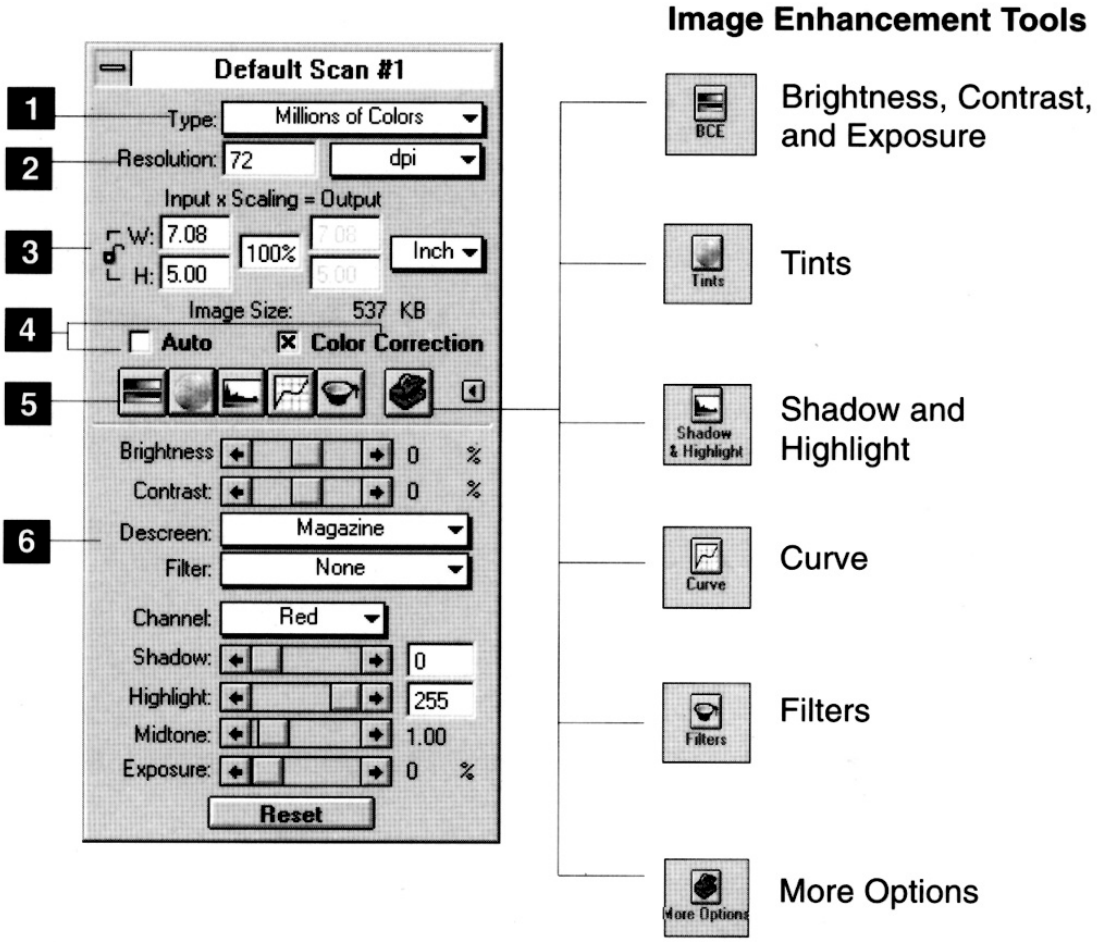
3. The **Action buttons** generate a specific action from the scanning software. The Action buttons include Preview and Scan.

4. The **Scan Material Status** icon shows your scan material, whether it's reflective, positive, or negative.

5. The **Preview Area** is where the preview image appears after you click on the Preview button

6. **Rulers** are located on both sides of the window to help you with measurement and alignment.

Settings Window



1. The **Type** menu determines what your resulting scan will be.

2. The **Resolution** box lets you specify a value in which the image will be output.

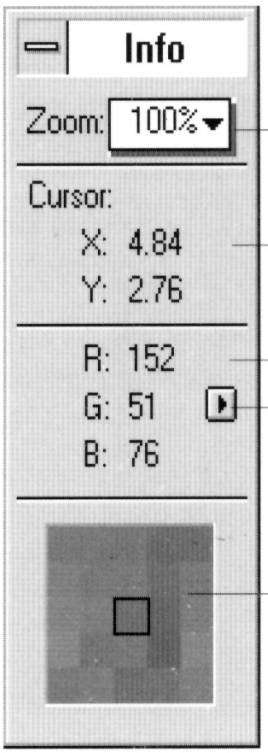
3. The **Image Dimension controls** include various parameters for input width and height, scaling, output width and height, and unit of measurement.

4. The **Image adjustment buttons** include Auto to optimize contrast, and Color Correction to adjust colors.

5. The **Image Enhancement tools** let you improve image quality by enhancing image characteristics such as brightness and contrast, shadows and highlights, and others.

6. The bottom half of the window opens when you click the **Window Expansion button** (the arrow after the last image enhancement tool).

Information Window



1 The **Zoom Level Display** shows the magnification levels possible — from 100% to the maximum 1600%.

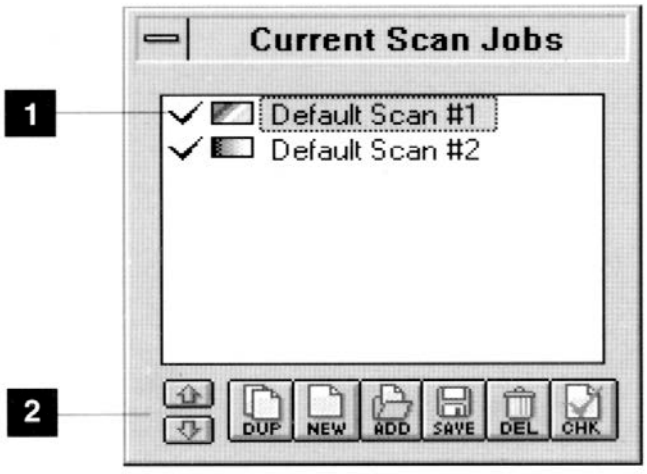
2 The **Cursor Locator** shows the coordinates along the x and y axis where the cursor is resting.

3 The **Color Meter Display** shows the values of the red, green, and blue color channels of an image part.

4 The **Sample Size button** lets you choose how color information will be read — whether it will apply for a single pixel or an average area.

5 The **Pixel Display** shows the color information of pixels in the image part where the cursor is resting.

Scan Job



1 The **Title Area** shows the number of jobs created. Check marks indicate which job or jobs are to be scanned; the current scan job is the one highlighted.

2 The **Function Buttons** allow you to create or manipulate the settings of a scan job.

Appendix - B
What is your final output for your image?

1. Internet Web Page, Computer Monitor
2. Paper
3. Projection machines (LCD) onto a wall or screen

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1. Internet Web Pages / Computer Monitor

Type of material that can be used	**Resolution**	**Scale**	**Image Size** - Viewing in a web browser (Netscape) usually whatever the original size of the image, Netscape will enlarge by about 1 inch or bigger
Color, Black/ White, Line Art, Photographs	100 dpi * Computer monitor can only display an average of 72 dpi	100 %	Example: 1. Original image: 6w X 4.2h File Size: 384 Kb Netscape: 8 x 5.5 (little more than 3/4 the monitor size) 2. Original image: 4 x 2.8 File Size: 171 Kb Netscape: 5.25 x 3.5 (less than 1/2 monitor size)

2. Paper

If scanning for an ink jet color printer, **scan at 1/3 of the resolution**.
For example using a **Color** Inkjet Printer:

Printer Resolution (Dpi)	**Scan at 1/3**
360	120
600	200
720	240
1440	480

** If scanning in grayscale or line art,
use the full resolution of the printer without dividing by it by three.

3. Using a LCD Projector to display images onto a wall or screen

Most common LCD Projectors can project images at 300 dpi at 800 x 600 pixels

Excellent (high priced) LCD Projectors can project 16 millions of colors at 800 X 600 with a resolution of 600

Appendix - C
Resolution - Dots per Inch (Dpi)

The choice of dpi is ruled often by practical considerations. The higher the dpi number the more information in the file, and the greater the ability to enlarge a detail from that image (if your viewing software supports such a feature). Note, though, that if the original image does not have much detail to enlarge, a high dpi setting may gain you little.

Raising the dpi value also increases the file size, sometimes beyond a size that your viewing software can cope with, or even be able to store. To take an extreme case, a 400 dpi, 24- bit color TIFF image that is as big as the bed of the scanner (8.5 x 14 inches) would be 55 megabytes in size. So, there is a degree of experimentation, and of tailoring the resolution to the purpose of the scan, in choosing a dpi value. Anything below 100 dpi is probably too low, but anything above 300 dpi may result in a larger file than is necessary, but not always. It all depends on the final output.

Display for Computer Monitor Only !

If the image will be primarily displayed on a screen (such as an image for a web page), as opposed to being printed out, and if you do not need to enlarge details from it; there is no reason (except archival concerns) to scan higher than 100 dpi. Because computer monitors screen resolution are at an average of 72 dpi. So why scan in an image at 300 dpi if you or going to put it on the web and almost every computer monitor can only display at 72 dpi.

So, just as with image type, you need to match resolution to the purpose of the scan. A "clipart" image for a web page is fine at 100 dpi; an archival scan of a manuscript is not. The following chart shows the file size (mb / kb) of an uncompressed / compressed 4" x 5" image in different types and resolutions:

Resolution (dpi)	**400**	**300**	**200**	**100**
Millions of colors (24-bit)	8.79mb / 1.24mb	4.46mb / 706kb	1.98mb / 400kb	466kb / 131kb
Billions of Colors (48-bit)	17.1mb / 13.9mb	9.60mb / 7.93mb	3.99mb / 3.41mb	1.99mb / 876kb
256 shades of Gray	4.77mb / 1.19mb	2.74mb / 758kb	782kb / 202kb	196kb / 56.4kb
1000's shades of Gray	5.96mb / 4.68mb	3.39mb / 2.56mb	1.43mb / 1.09mb	339kb / 263kb
Line Art	395kb / **no**	223kb **compression**	99kb ……	25kb ……..

Appendix - D
Scaling

If the image you are scanning is the size you desire keep the **Scaling** at 100%. If the image you are scanning is smaller than you desire, you may **up** the **Scaling.** If the image you are scanning is larger than you desire, you may **lower** the **Scaling.**

Appendix -E
Image File Formats

While using the scanner you are likely to create an image in an uncompressed format such as TIFF (works on all platforms), BMP (MS windows only) or PICT (Mac only). The TIFF file has long-term archival use, but is usually too large as a file to work with effectively, especially if you want an image as part of an HTML documents on the Web.

There are several digital image formats that save files in a compressed form -- GIF, (Group IV FAX compression), and JPEG being the most common. GIF is good if you use a black and white drawings (not grayscale or color); GIFs give moderate compression on grayscale or 8-bit color (256 colors); the most useful of all is JPEG, which gives extraordinary compression on grayscale, 8-bit, and 24-bit color images. Note, however, that a JPEG compression does not simply store information in an abbreviated fashion; it also deletes (loses) information from the file. If you are working with large color files, a practical working method may be to archive the original 24-bit color images in a rich but large format such as TIFF and work with JPEG versions that will be a fraction of the size. At normal size it is difficult to tell a JPEG from a TIFF, even though the former file size may be 10-40 times smaller than the latter. You will see, however, that as you begin to enlarge the two files the JPEG image begins to "break down" much sooner than the TIFF (its constituent pixels become visible).