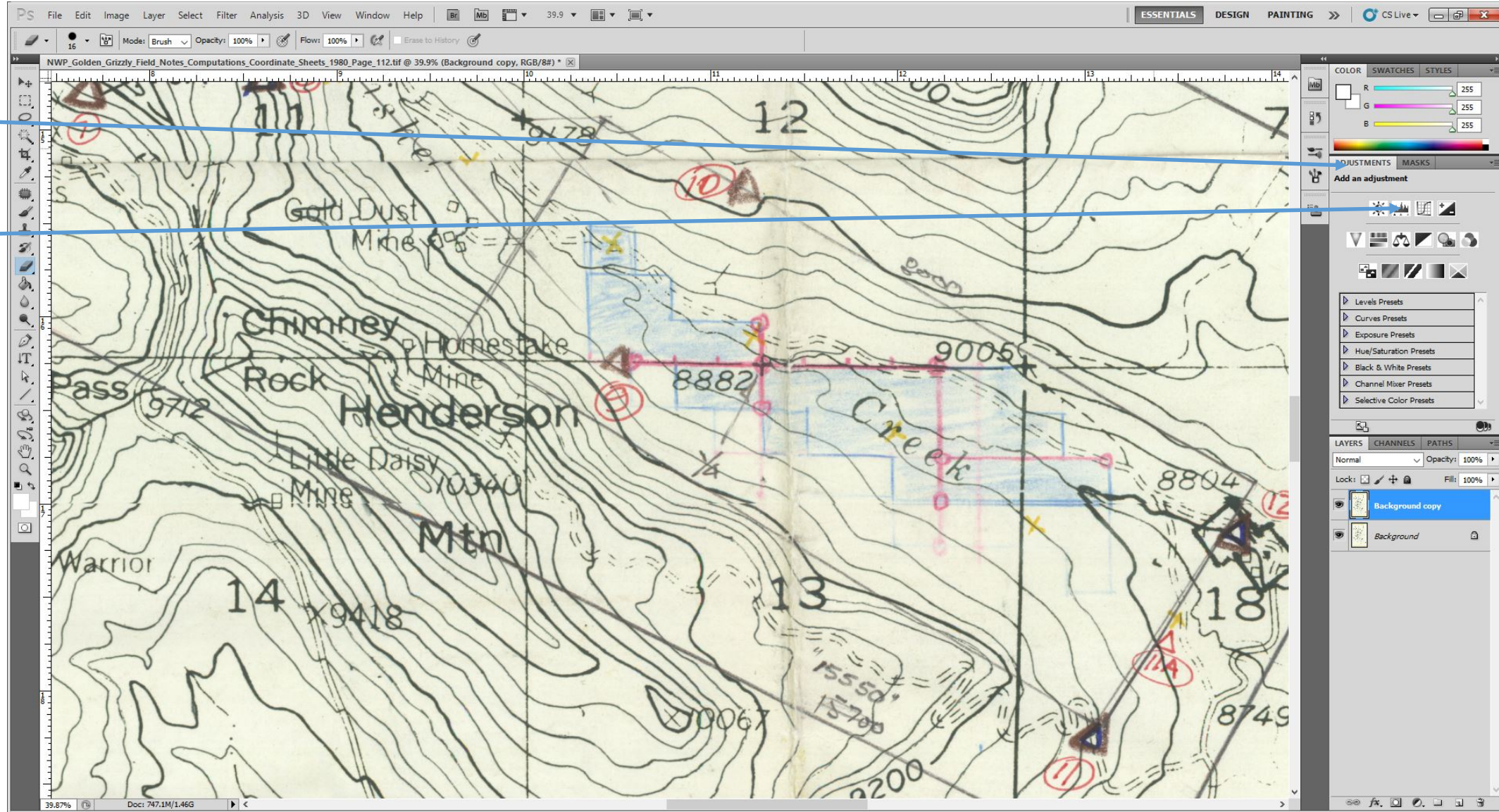


Levels and Curves Adjustment Tips

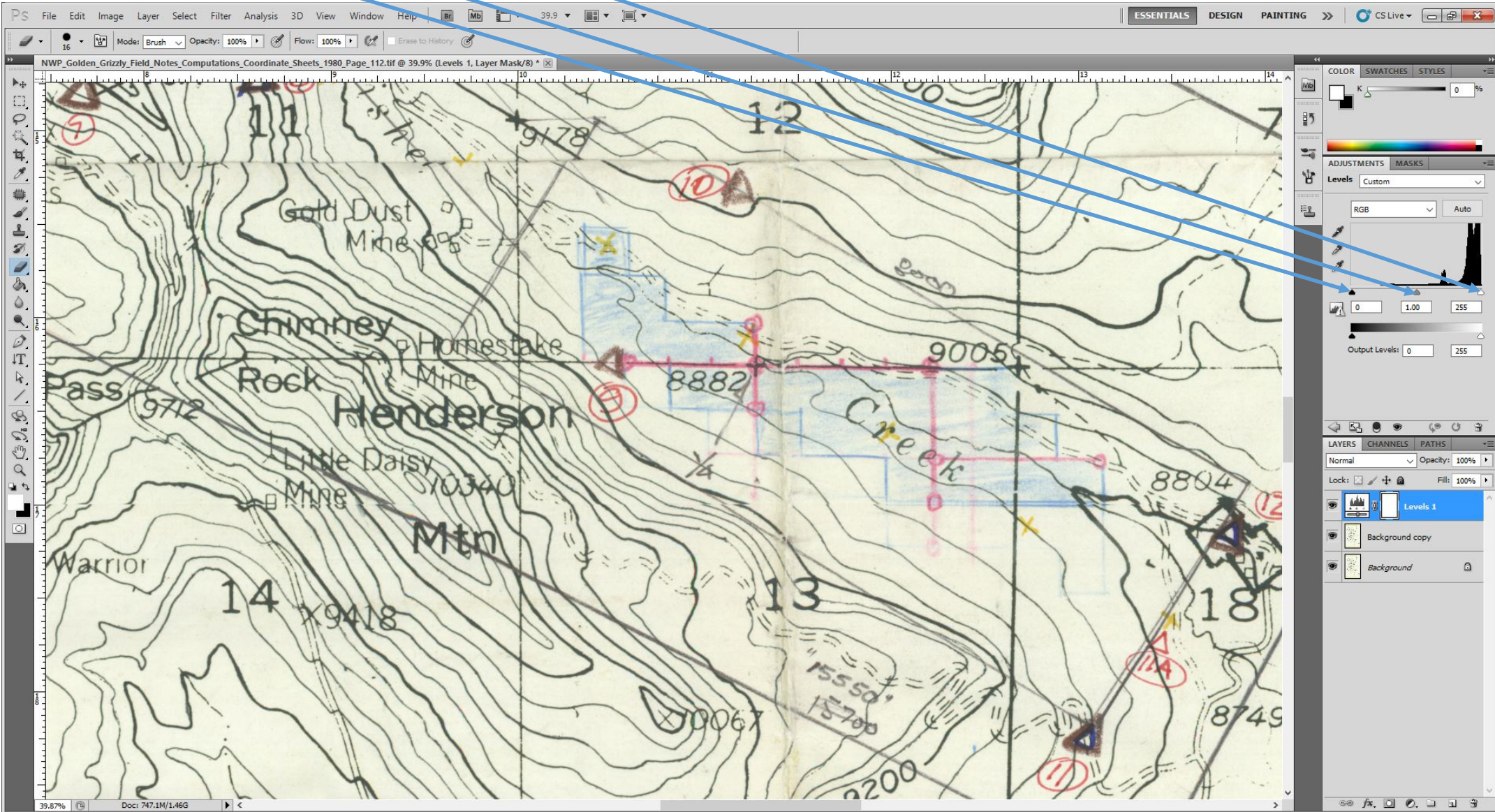
While the **Unsharp Mask Filter** works well for simple images, like black and white documents (see Dust and Scratches Filter Tips), sometimes more control over adjustments is useful. The **Levels** and **Curves** adjustments give more control over adjustments and are especially useful on colored documents.

To use the **Levels** or **Curves** controls, click on the appropriate button in the **Adjustments** panel. In this case, a **Levels** adjustment proves useful.



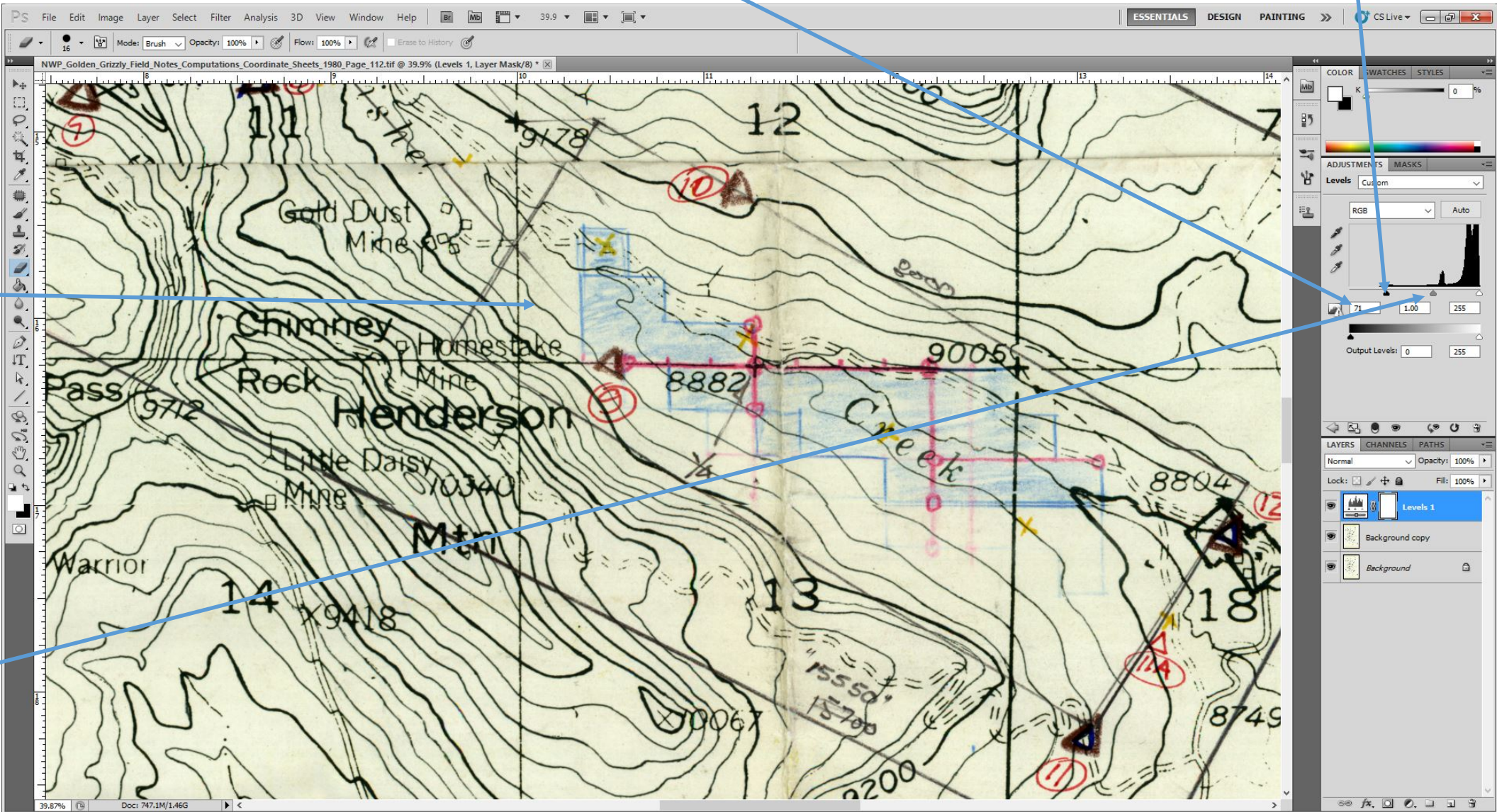
Once the **Levels** button is clicked, the **Adjustments** panel shifts to show the **Levels** adjustments options. The main controls for **Levels** adjustments are the black, white, and gray points.

By clicking and dragging these arrows, the amount of black, white, and gray in the image shifts. Note that adjusting black or white automatically adjusts gray as well.



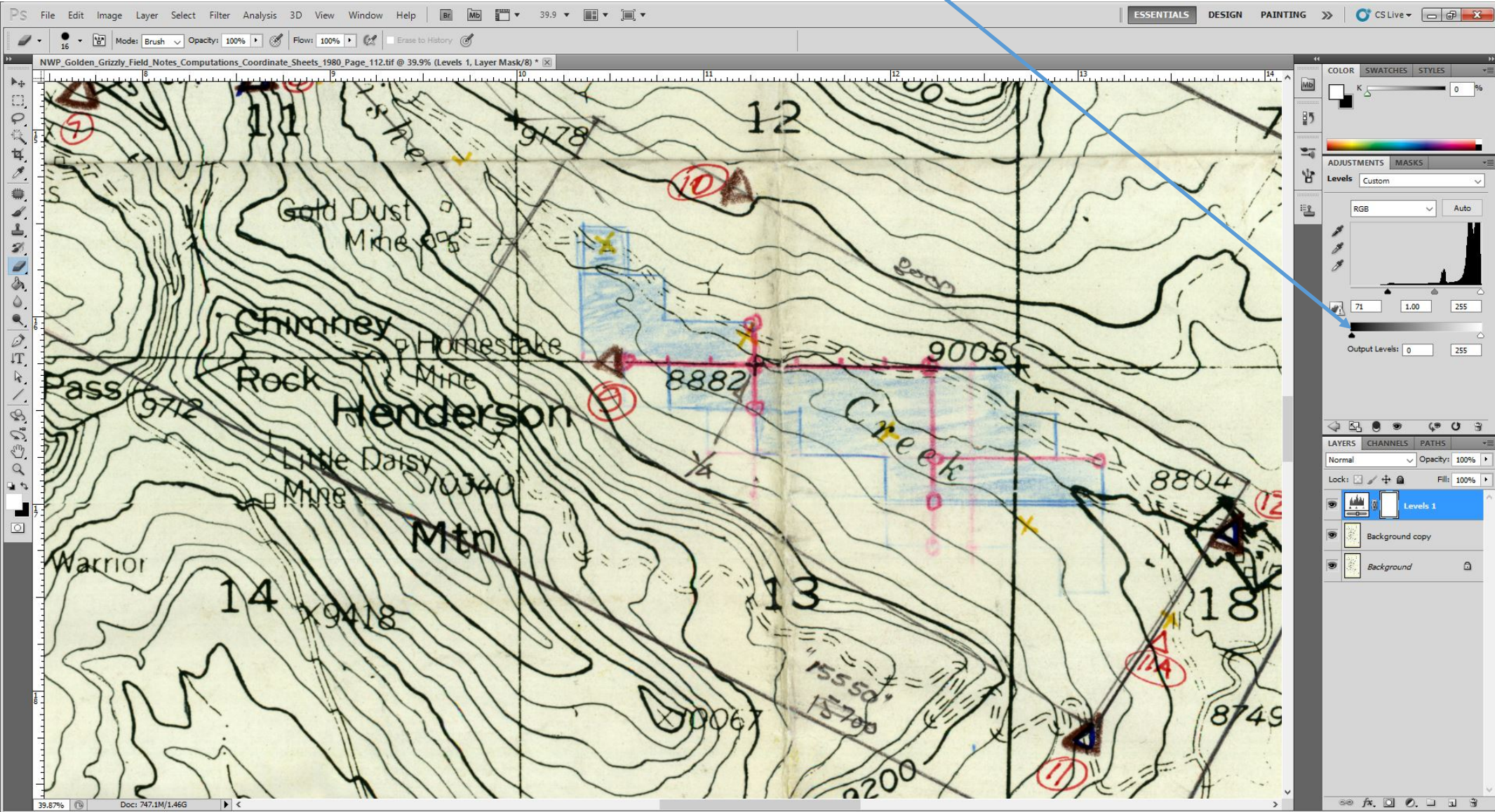
Adjusting the black level upward has a similar effect on this map as using the **Unsharp Mask Filter**. In this case, a black level of 71 sharpens the topo lines effectively while leaving the colored pencil areas still visible. To adjust this level, either click and drag the black level slider arrow, or, if you know exactly what level you need, type in the number.

Test several different level settings to find the best looking adjustment. Photoshop will preview the adjustment in the main screen as the level is adjusted. Remember that the gray level automatically adjusts when the black is adjusted. Gray adjustment is useful for photos, but not usually necessary for documents.



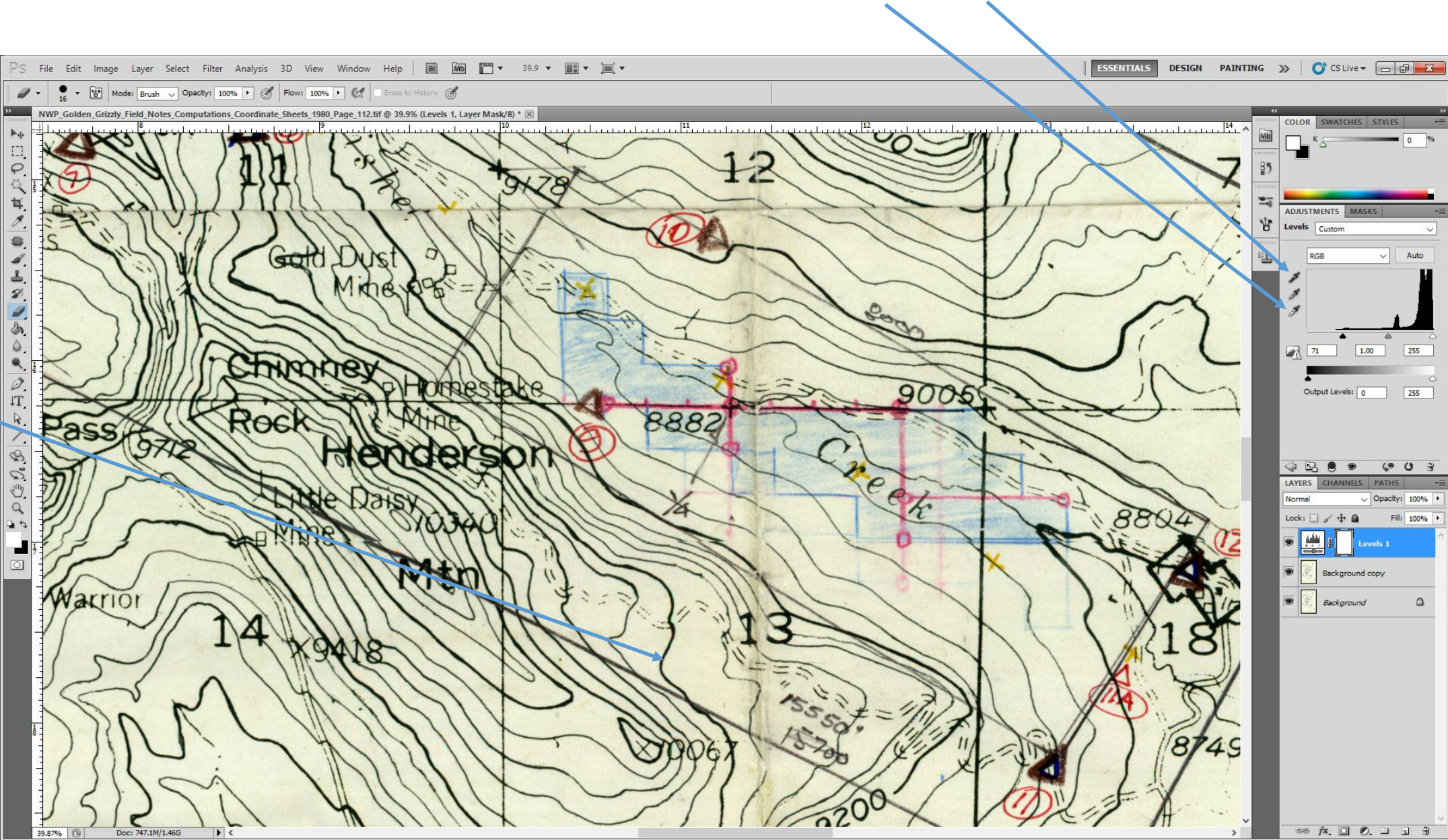
Feel free to experiment with gray adjustment and adjust the white level if necessary. In this case, no white or gray adjustment is necessary. For even greater control, the **Adjustments** menu allows adjustment of the maximum black and white levels. Photoshop offers two methods of setting the maximums. The first is the **Output Levels** slider.

Similar to the black, white, and gray adjustments, simply click and drag the maximum black or maximum white slider arrows to adjust them. Dragging them toward the middle of the slider moves either closer to gray, effectively limiting the darkest or lightest possible output of the image.



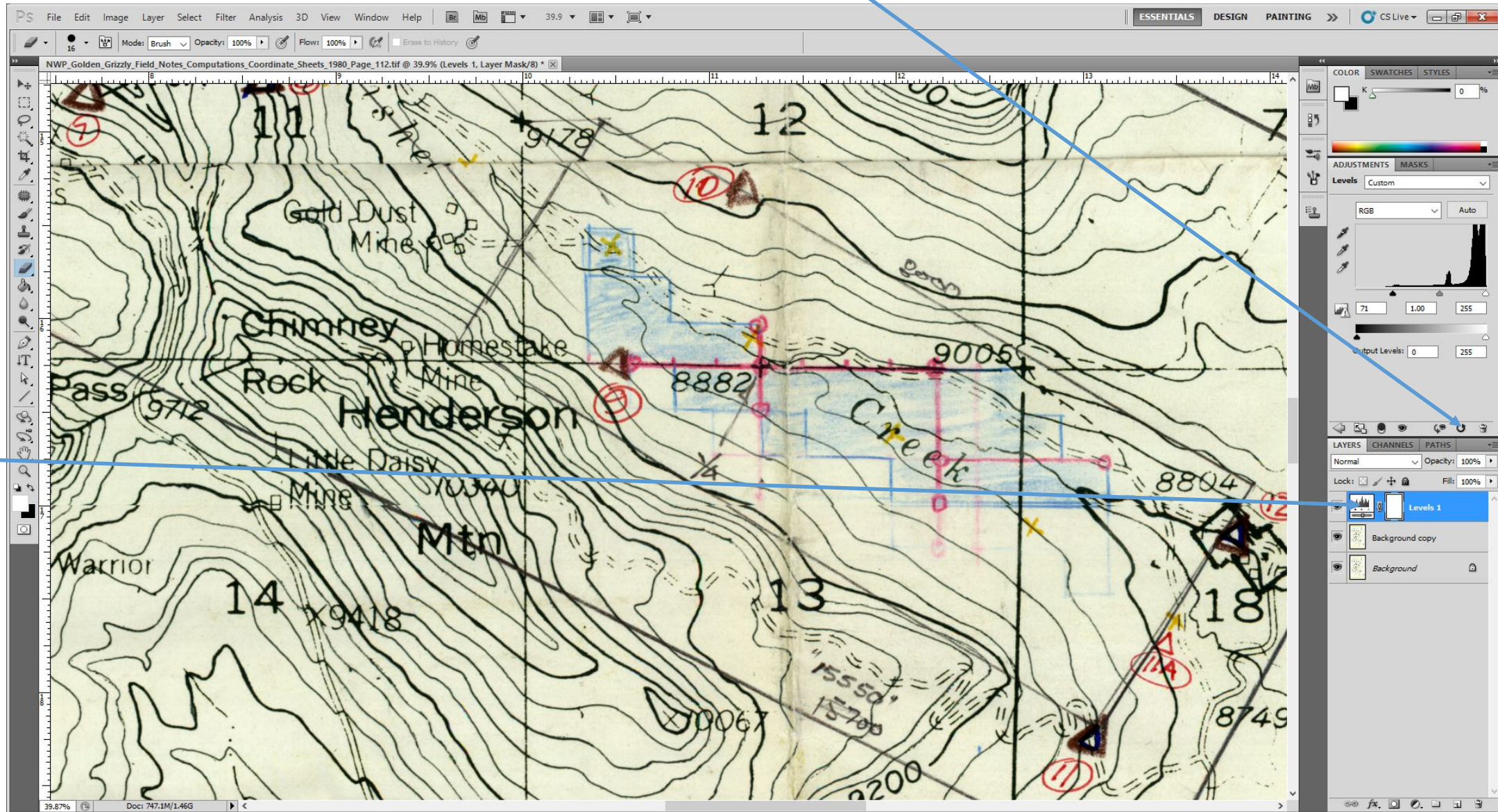
The other method of setting the maximum black and white levels is to use the eyedroppers on the left side of the **Adjustments** menu. To use these, choose the appropriate eyedropper and click on the image at the location that best matches the desired adjustment.

For example, by clicking the black level eyedropper, then clicking on one of the dark topo lines, Photoshop will limit the absolute darkest available output in this image to the same darkness as the line that was clicked. This works the same for max white level.



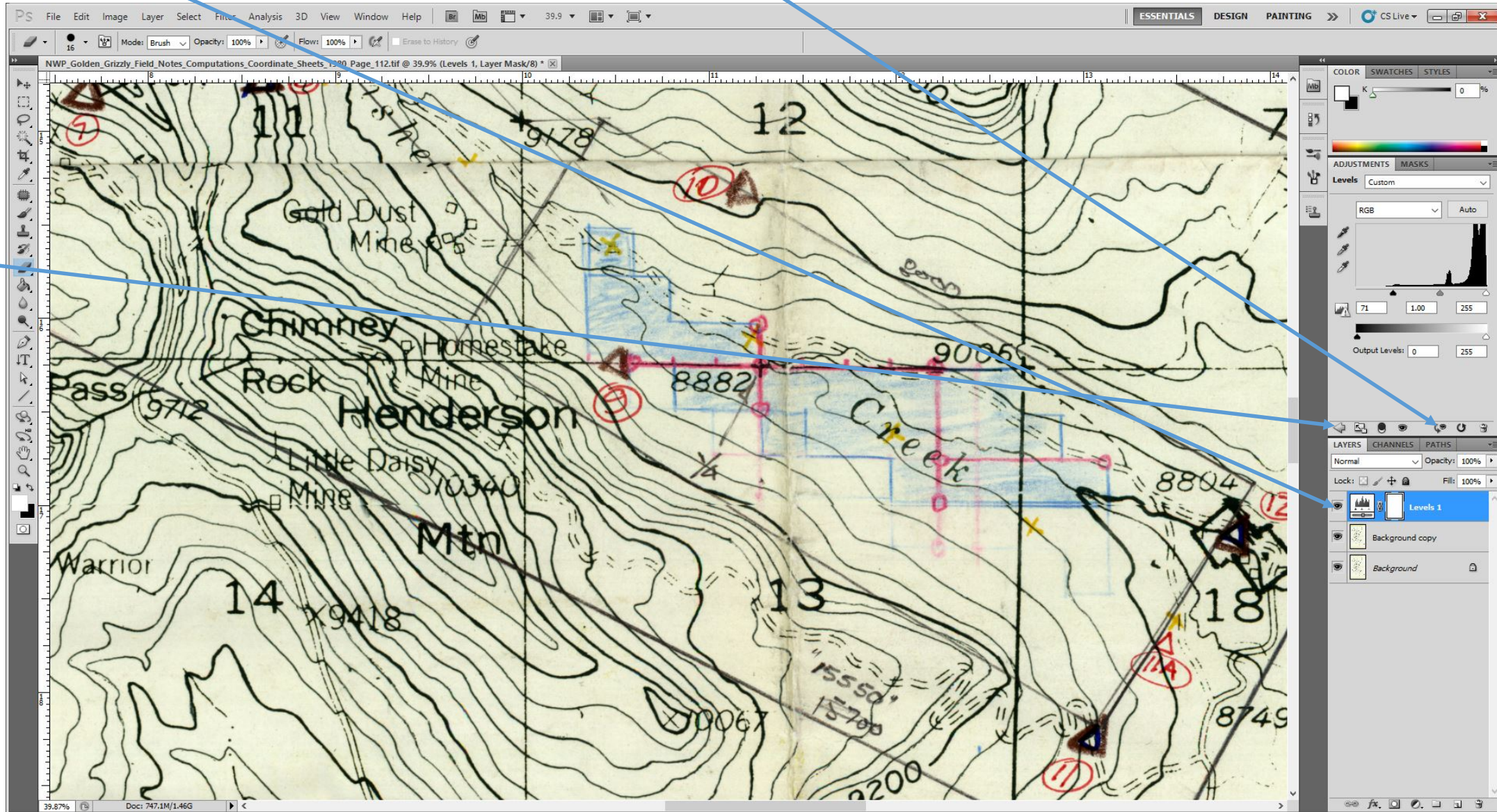
In this case, since no areas of high whiteness exist on the image, setting the max white level using the eyedropper would effectively black out the entire image. If a mistake is made while adjusting levels, the entire adjustment can be reset or deleted. To reset the adjustment layer, click on the **Reset to adjustment defaults** button.

Any use of the **Adjustments** menu adds an adjustment layer to the layers panel. If preferred, simply delete the adjustment layer to reset all adjustments. Also note that any layers above the adjustment layer in the layers panel will not be affected by the adjustment layer.



To compare the before and after images, either click and hold the **View Previous State** button or turn the visibility of the adjustment layer on and off.

To return to the main **Adjustments** panel menu, click on the back arrow.

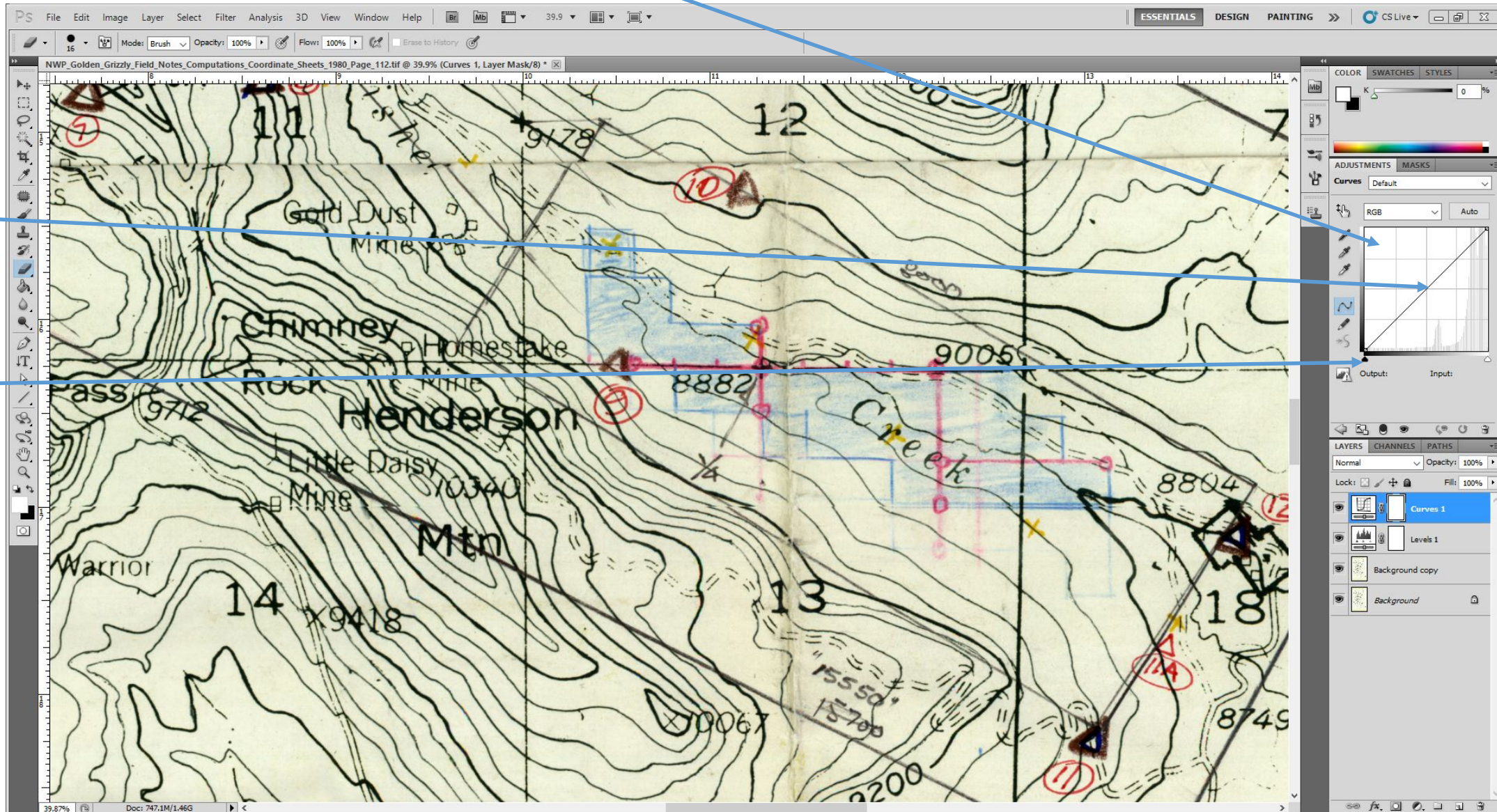


From the main **Adjustments** panel, click on the **Curves** button to enter curves adjustments. **Curves** allows even greater control over adjustments than **Levels**. Instead of simply adjusting the black, white, and gray levels as single points, **Curves** allows adjustments over a spectrum, shown in the **Curves** histogram.

To adjust the curves values, click and drag any point on the line in the histogram.

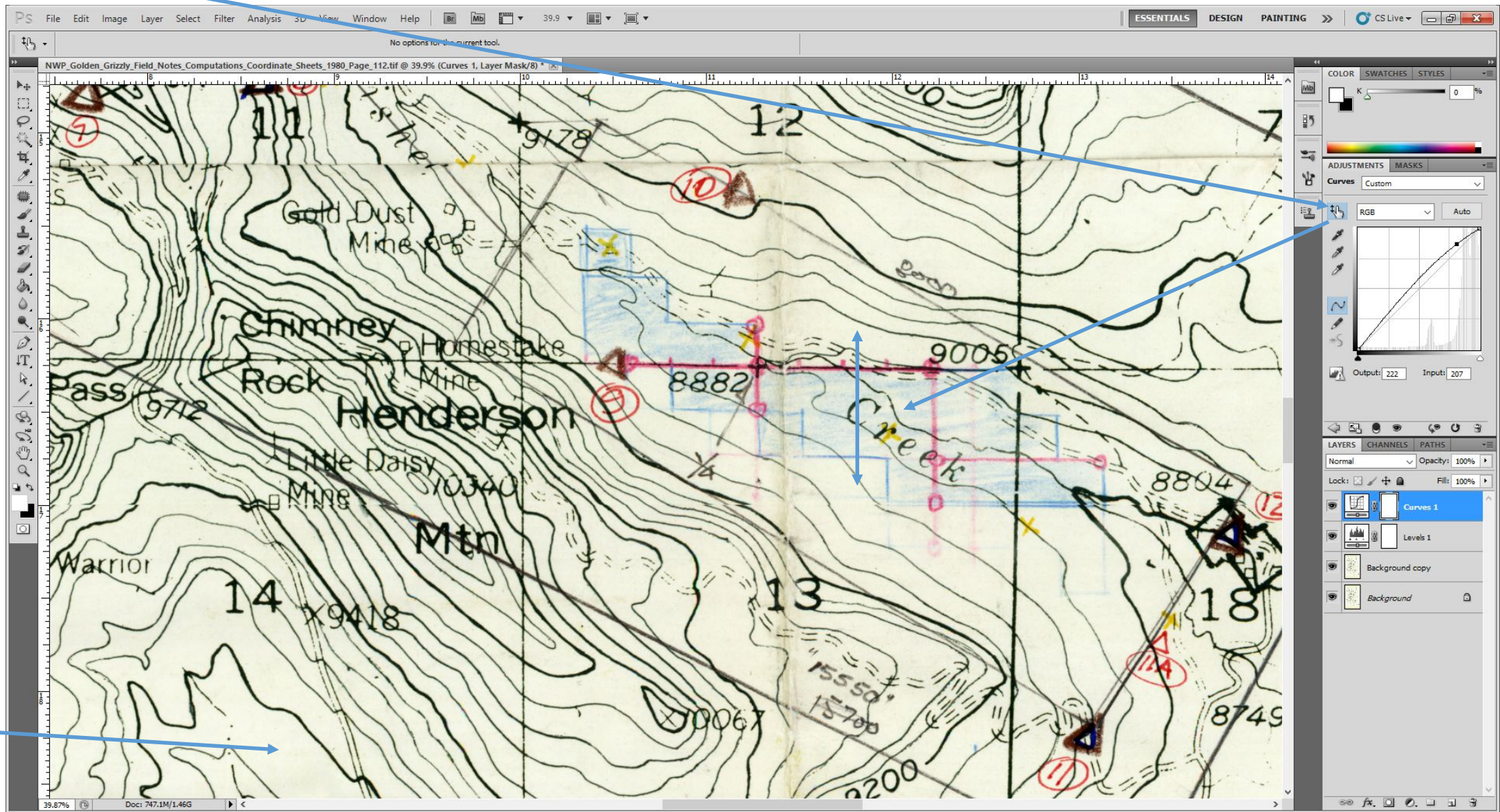
Curves also has a maximum black and white output slider, similar to **Levels**.

The best way to learn to adjust **Curves** is to experiment with it. The left side is darker and right side is lighter.



One of the most useful features of **Curves** adjustments is the ability to quickly adjust individual color channel levels. **Curves** offers a special tool for this. To use it, click on the curves modifier button. The mouse cursor will turn into a pointing hand with up and down arrows.

Once the button is selected, click on any color in the image and drag the mouse up or down to adjust the levels of that color in the entire image. In this case, the map is faded to yellow, so clicking the blue color and dragging up adds enough blue to whiten the map some.



Once this adjustment is made, the histogram line will reflect any changes. If a mistake is made, reset or delete the layer in the same manner as with **Levels** adjustments.

Some basic knowledge of color schemes helps when using **Curves**. For example, the previous adjustment worked because blue is opposite yellow on the color wheel. The best way to become proficient is to experiment.

Remember to save your work.

