



Really Long Exposure Photography

and other related techniques

-Dan Landis

Chapters:

- I. Photographers Who Inspired Me
- II. The Artistic Concept
- III. The Equipment
- IV. The Technique in the Field
- V. Results
- VI. Post-processing ("Selective Gradient Masking")
- VII. Sample Finished Photographs

I. Photographers Who Inspired Me



Julia Anna
Gospodarou

Julia Anna
Gospodarou





Julia Anna
Gospodarou

Kevin
Holliday





Kevin
Holliday

Kevin
Holliday





Joel
Tjintjelaar

Joel
Tjintjelaar



Joel
Tjintjelaar



Chapter II: The Artistic Concept

“Suspended Recognition”

In the space of time while your brain is trying to recognize and categorize a picture, you are noticing lines, shapes, and patterns that you might not have noticed had you immediately recognized the image.





Suspended recognition: Dandelion seed head

Suspended Recognition

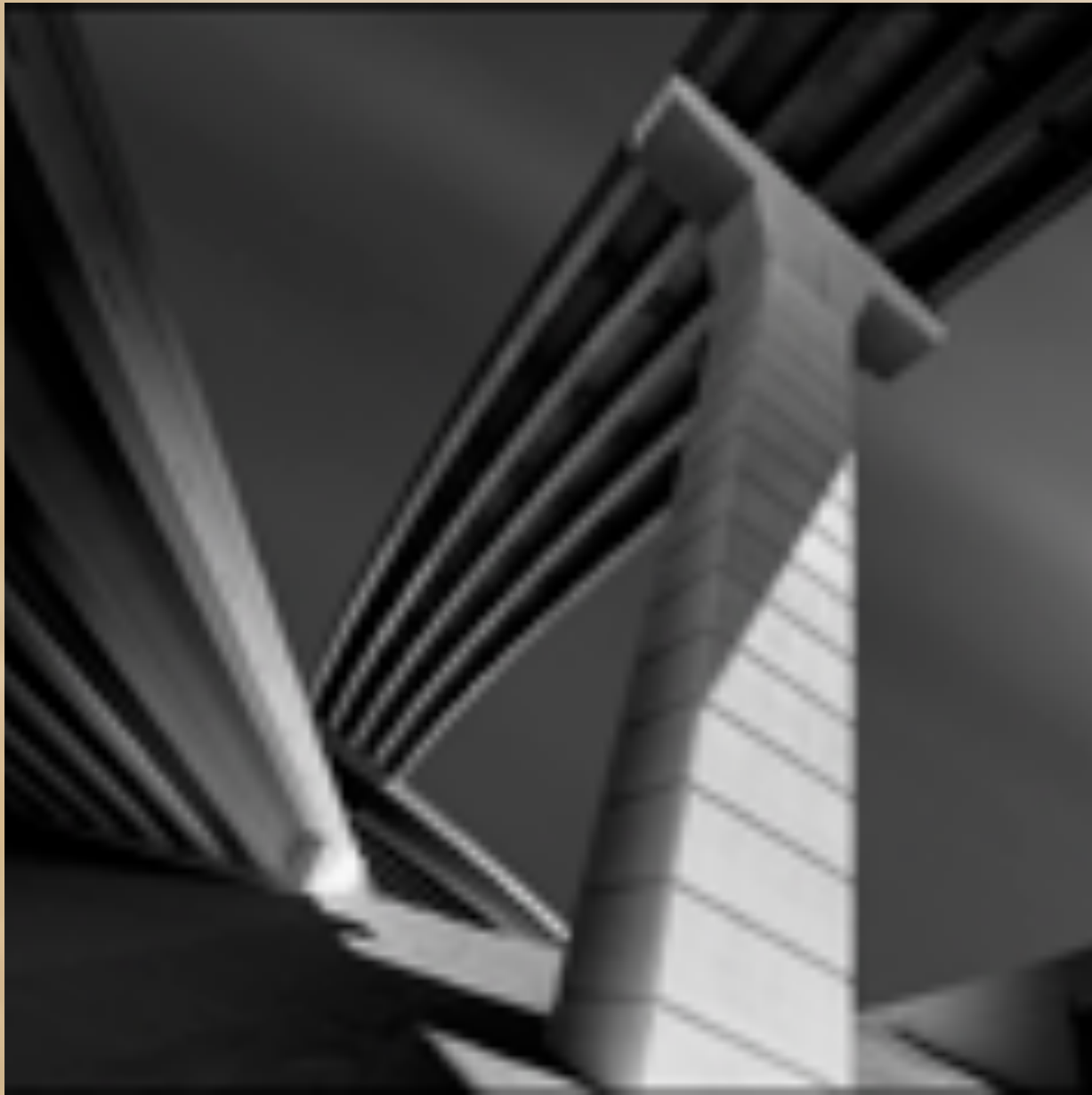



Photo by Kevin Holliday

- ◆ In the moments of suspended recognition, the viewer is forced to look at a familiar object in a totally new way..

Chapter III: The Equipment

For very long exposure photography, you need a neutral density 10-stop to 16-stop filter



Add to Compare

Formatt Hitech 77mm Firecrest Ultra ND 4.8 Filter (16-Stop)
SKU: FHFCULND-877MM-FR04TH6LE

Key Features

- 4.8 Solid Neutral Density Filter
- 87.5mm Filter Frame, 16-Stop
- Features Anti-Reflect
- Neutral Results Across All Spectrums

[See All Details >](#)
Available in other Styles, Configurations & Kits


\$196⁹⁰
Excl. Taxes, Shipping

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In Stock

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Add to Compare

B+W 77mm SC 110 ND 3.0 Filter (10-Stop)
SKU: BWS10027MPS-F-87-100377

★★★★★ 187 Reviews

Key Features

- 3.0 Solid Neutral Density Filter
- 87.5mm Filter Frame, 10-Stop
- Features Anti-Reflect
- Allows Reduced Shutter Speed

[See All Details >](#)
Available in other Styles, Configurations & Kits

\$129⁹⁵

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Other Equipment Needed:

- A camera capable of “bulb” mode
- A sturdy tripod
- A remote shutter release
- A circular polarizing filter
(Increases cloud/sky contrast)

Stops of Light Reduction (There are filters that are measured to a fraction of a stop, but, for simplicity, we are using whole numbers here with the exception of a few filters.)	Optical Density Number (Sometimes prefaced with an "ND" before the number)	ND 1 Number	Filter Factor Number (Sometimes prefaced with an "ND" before the number)	Amount Light is Reduced
0	0	-	0 (aka, Clear Filter)	0
1	ND 0.3 or "ND0.3"	ND 101	1.4x "ND1"	10
2	ND 0.4	ND 102	4	14
3	ND 0.5	ND 103	8	18
4	ND 0.7	ND 104	16	17.6
5	ND 0.8	ND 105	20	150
6	ND 1.0	ND 106	25	15.4
6.25	ND 1		28	15.8
7	ND 1.1	ND 107	32	17.0
8	ND 1.4	ND 108	36	128
9	ND 1.7	ND 109	50	180
10	ND 2.0	ND 110	ND 2 (aka, ND1000)	1700
11	ND 2.3	ND 111	200	1200
12	ND 2.4	ND 112	400	1400
13	ND 2.6	ND 113	600	1800
13.5	ND 2.8		1000	17000
14	ND 3.1	ND 114	1000	17000
15	ND 3.3	ND 115	3200	10200
16	ND 3.6	ND 116	6000	14000

10-stop
ND filter



16-stop
ND filter



Long-Exposure Conversion Chart

16 Stop ND Grad Chart

1/30 = 2084	1/200 = 327	1/800 = 81
1/40 = 1638	1/250 = 262	1/1000 = 65
1/50 = 1310	1/320 = 204	(Converts shutter
1/60 = 819	1/400 = 163	speed to seconds,
1/100 = 655	1/500 = 131	shown on camera
1/125 = 524	1/640 = 102	in bulb mode.)

Ideal

I keep this chart in my camera bag to help me calculate long bulb exposures.

I try to aim for about 5 minute (300 second) exposures at ISO 100. Longer than that, and too much noise is possible. Shorter than that, and you don't get the long exposure effect.

IV. The Technique in the Field

1. Choose a windy, sunny day with blue sky and lots of clouds. (A sky with cumulous or cirrus clouds, with both blue and white, is best. Depending on desired result.)
2. Set up your camera on a sturdy tripod and compose the shot.
3. Rotate the circular polarizer to maximize sky contrast, and take note of the position of the polarizer.
4. Manipulate aperture and ISO so that shutter speed is around 1/200-1/250 sec. (for a 16-stop filter).



Choose a day with cumulous or cirrus clouds.

IV. The Technique in the Field (cont'd)

5. Set your camera to "time" or "bulb" mode.



Side note: Why is it called
“bulb” mode?

The term “bulb mode” in photography hearkens back to the days when exposure time was controlled by a bulb, attached to an air tube which held the shutter open for as long as the bulb was held. It means exposure time is under user control, rather than camera settings.

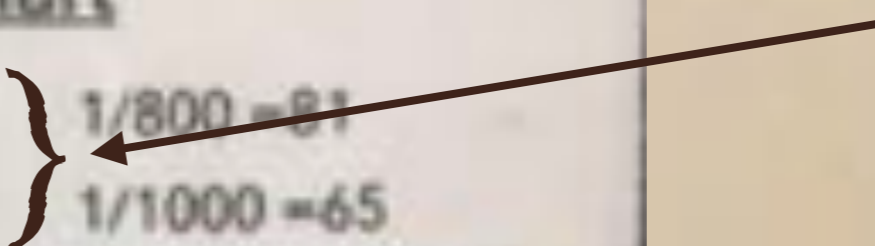


IV. The Technique in the Field (cont'd)

6. Based on the shutter speed needed for a correct exposure without the 16-stop filter, use the chart to determine the time needed for a correct exposure with the filter:

1/30 = 2084	1/200 = 327	1/800 = 81
1/40 = 1638	1/250 = 262	1/1000 = 65
1/50 = 1310	1/320 = 204	(Converts shutter
1/60 = 819	1/400 = 163	speed to seconds,
1/100 = 655	1/500 = 131	shown on camera
1/125 = 524	1/640 = 102	in bulb mode.)

Ideal



IV. The Technique in the Field

(cont'd)

7. Very carefully, and without changing the focus ring or the position of the circular polarizing filter, screw on the 16-stop filter.
8. Start the bulb exposure by triggering the remote shutter release.
9. Watch the camera exposure count, and stop the exposure when the desired second count is reached.

IV. The Technique in the Field

(cont'd)

10. View the result, check the histogram, and adjust, if necessary, for a second try.



Exposure made
at 500 seconds,
f8, ISO 100

V. Results



Coney Island, NY 344 seconds, f8



Lake Tenaya, Yosemite, 420 seconds, f8



San Pancho, Mexico, 620 seconds, f8



Riverscape Fountain, 431 seconds, f5.6



Hanalei Pier, Kauai, 371 seconds, f4 (10-stop filter)



Chicago Skyline, 328 seconds, f8

The surreal effect produced by very long exposures can be enhanced by converting to monochrome.





San Pancho, Mexico, 500 seconds, f8





Dayton, OH, 328 seconds, f 4.5





Tanaya Lake, Yosemite 430 seconds, f6.3

VI. Post-Processing: Selective Gradient Masking

Selective gradient masking is a Photoshop technique, using masks and the gradient tool to reveal lighter and darker gradations of the image in order to enhance shading.

Selective Gradient Masking

Step One: Using the photo processing tool of your choice, create three monochrome versions of your photo: Light, Dark, and medium. (+1, -1, and 0)



+1



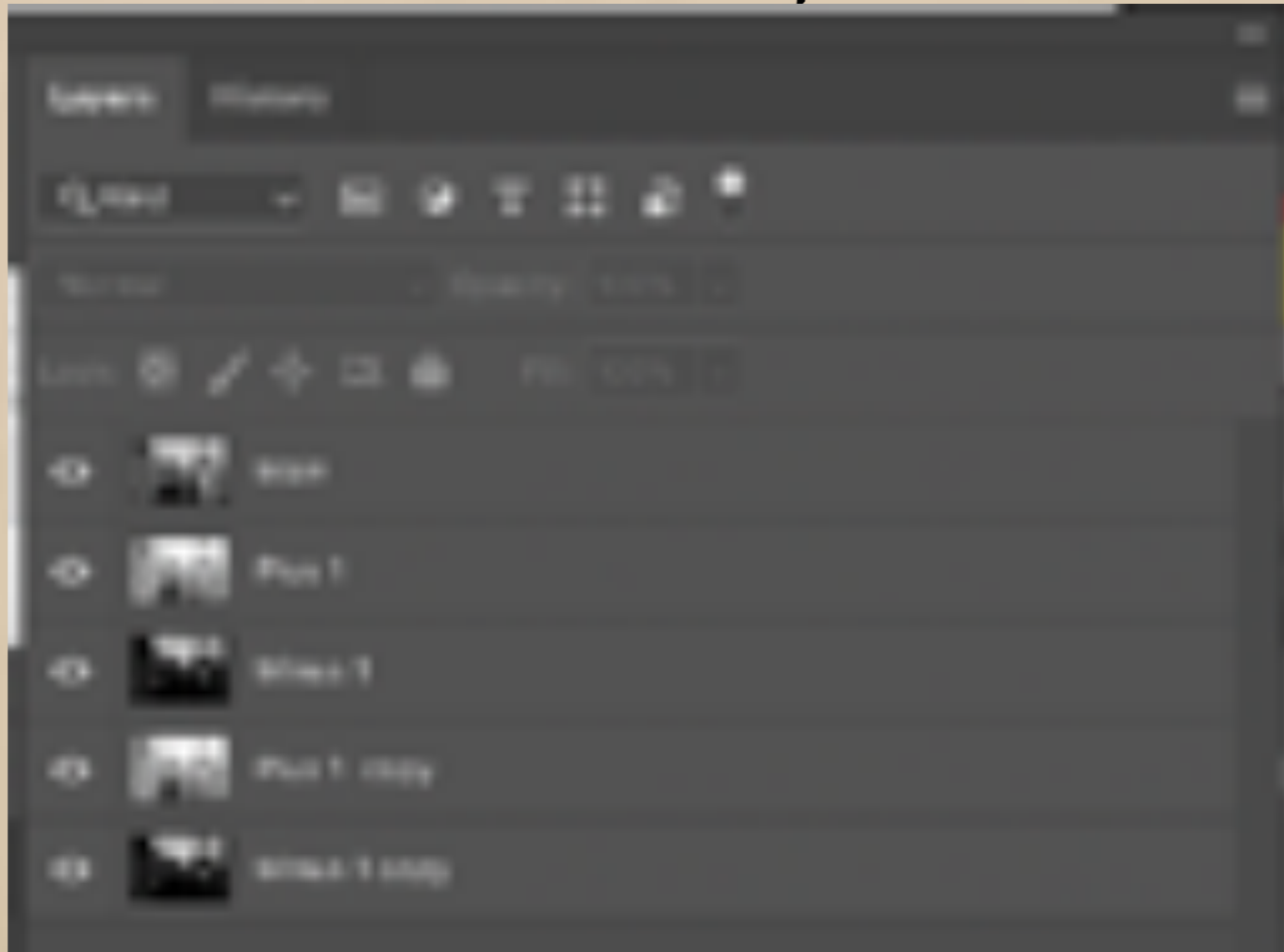
-1



0

Selective Gradient Masking

Step Two: Open these three files as layers in Photoshop, with the “medium” file (0) on top. Align the layers.

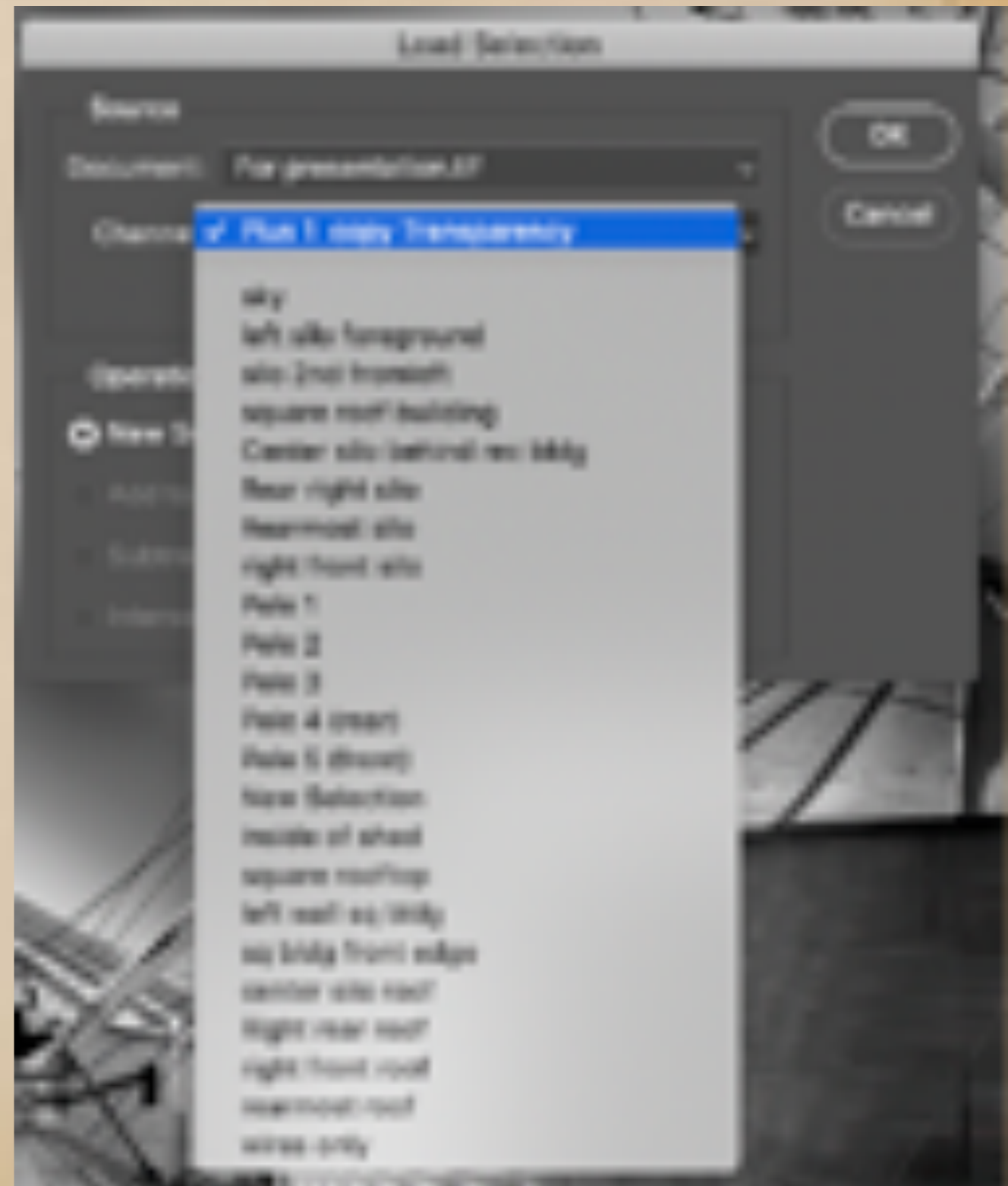


Step Three: Make copies of the +1 and -1 layers, and place them at the bottom in your layer order.

Selective Gradient Masking

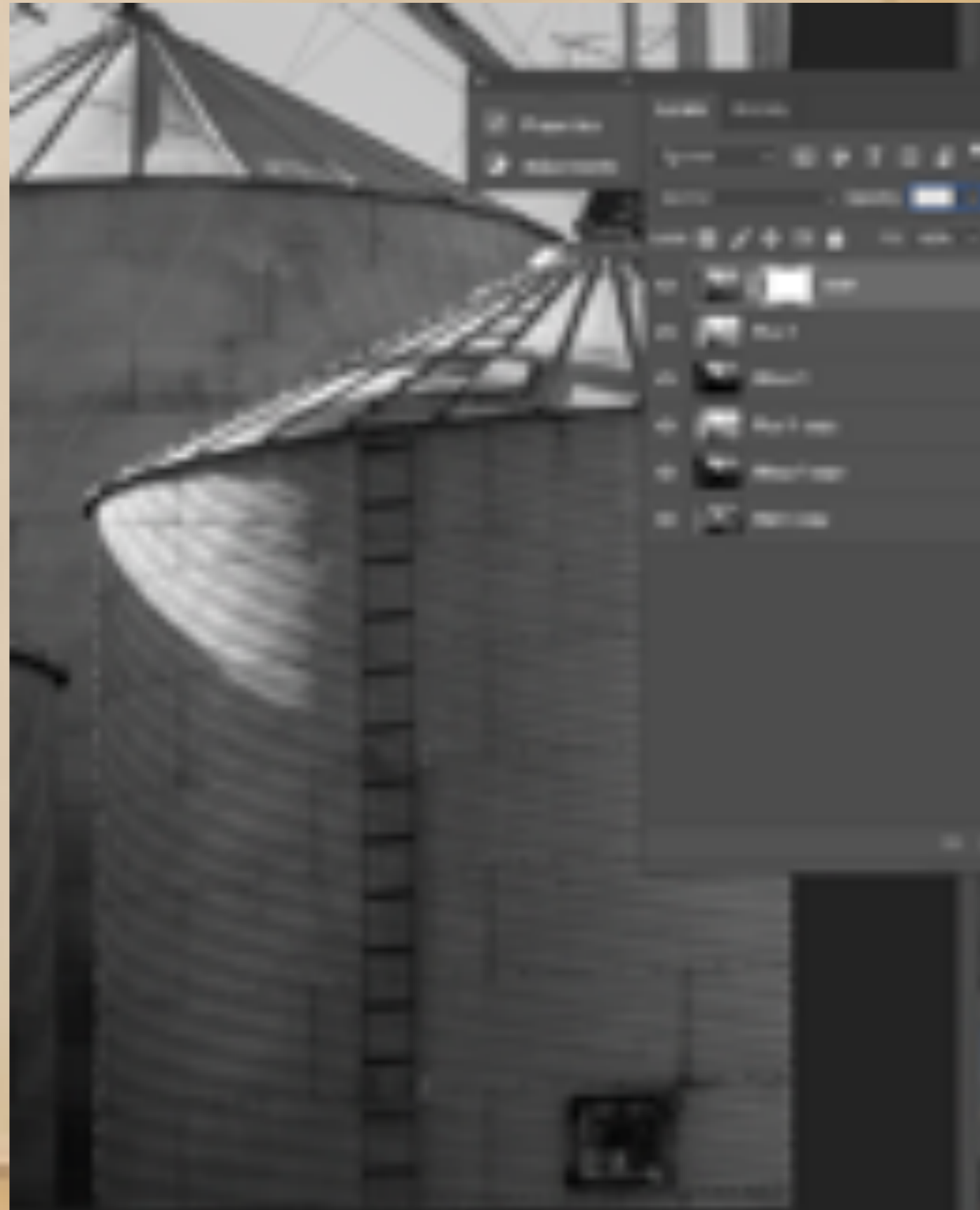
Step four: Working from the top layer, select and save every shape in the image.

This can take hours!



Selective Gradient Masking

Step Five: After all selections are complete, begin by placing a mask on the top (medium) layer. Then, choose one of the selections from the saved selections.

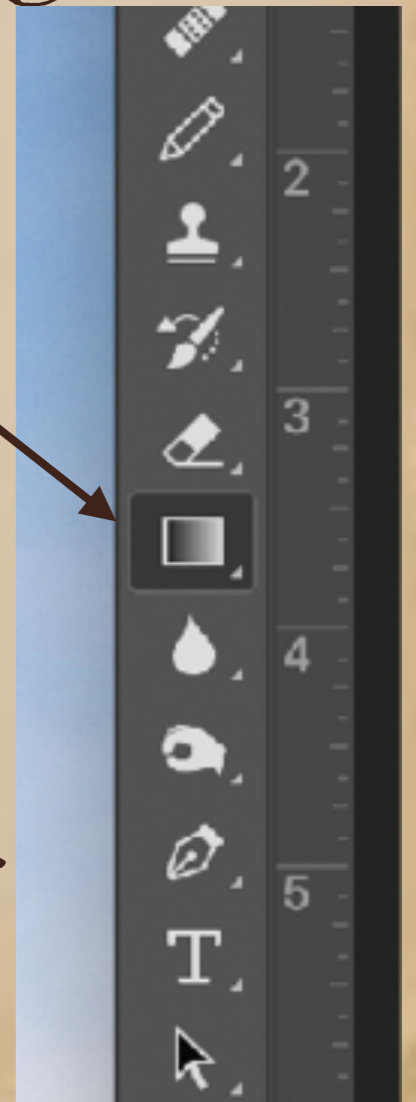


Selective Gradient Masking

Step Six: Use the gradient tool to reveal lighter (+1) portions of the layer below. There are many gradient options. I use the linear gradient tool.

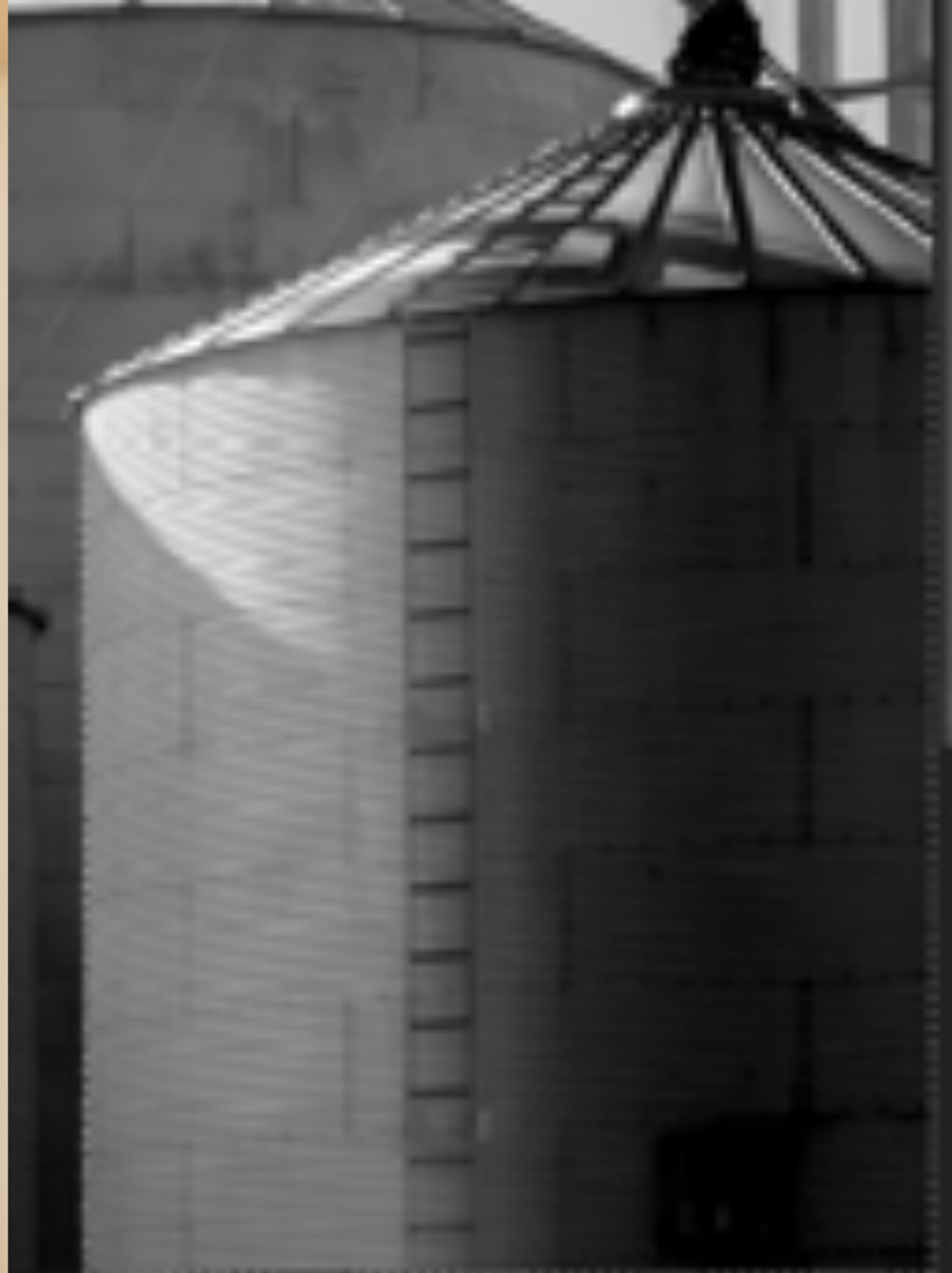
Pay attention to the direction of the light!

Merge the two top layers, and repeat the process with the darker (-1) layer.





Before



After

Demonstration time . . .

Before Selective Gradient Masking



After Selective Gradient Masking



VII. Sample Finished Photographs
Long Exposures and Selective Gradient Masking



329 seconds, f8



327 seconds, f7.1





340 seconds, f 6.3





327 seconds, f7.1



327 seconds, f8





327 seconds, f8

“Cheats”

After using the process several times, I soon realized that, in photographs that do not include water, a blurred sky can be dropped into any photograph.

And so, I compiled a collection of skies for the purpose of using them in this type of photography. . . .



My file of blurry skies



DPL Tait Station, hand-held shot on a cloudless day.



Selective gradient masking and dropped-in sky



I-35 ramp off of Washington St. Slate-gray skies



Selective gradient masking and dropped-in sky



That's all Folks!

Thank you!