



Figure G-1: Macallen Dam during the May 2006 flood, provided by NHDES. Photograph taken morning of May 16, 2006. Photograph used to estimate WSE at Macallen Dam and on downstream side of Veteran's Bridge.



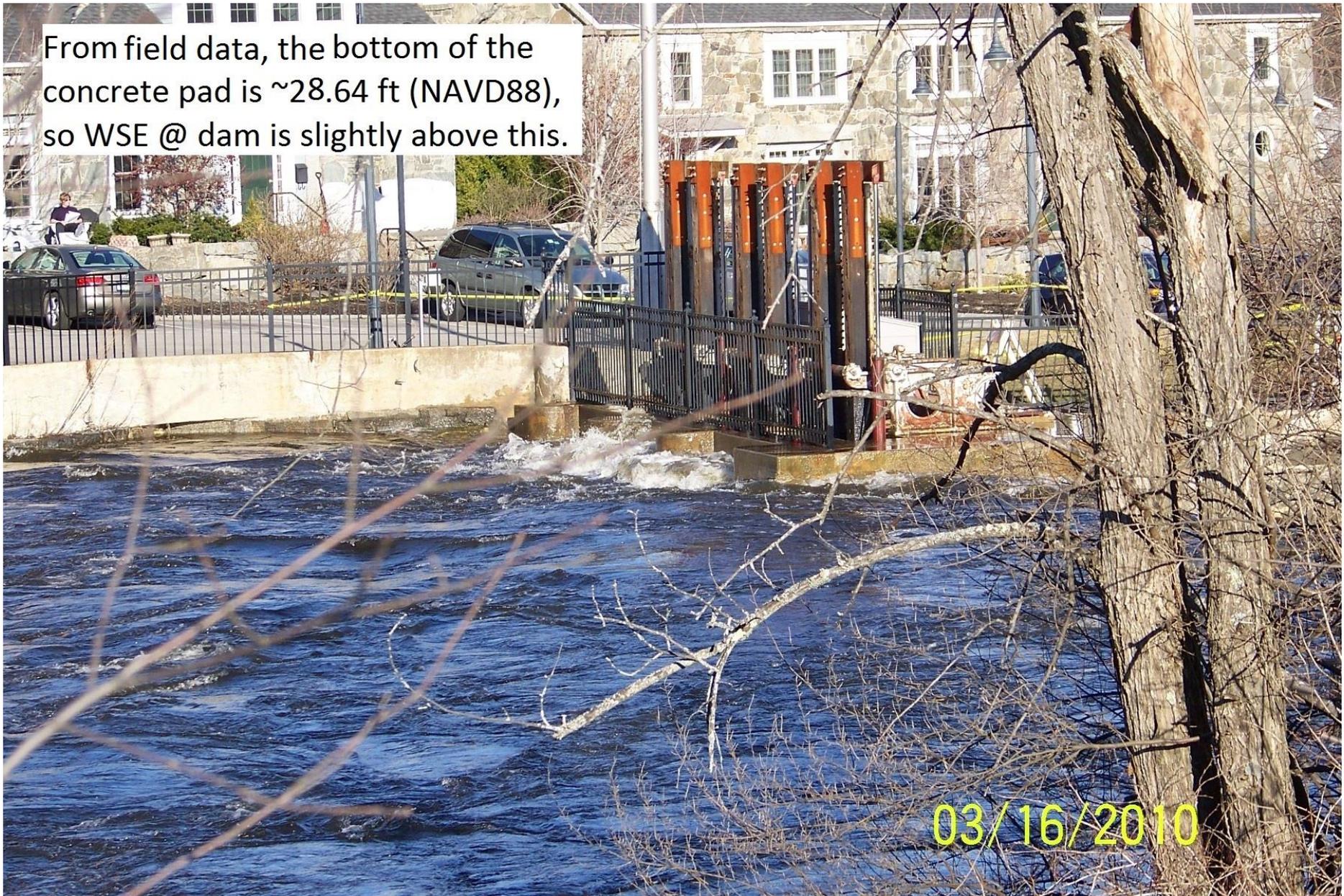
Figure G-2: Macallen Dam during the May 2006 flood, provided by NHDES. Photograph taken morning of May 16, 2006. Photograph used to estimate WSE at upstream side of Veteran's Bridge.



Figure G-3: Macallen Dam during the April 2007 flood, provided by NHDES. Photograph taken around 1 PM on April 18, 2007. Photograph used to estimate WSE at downstream side of Veteran's Bridge.

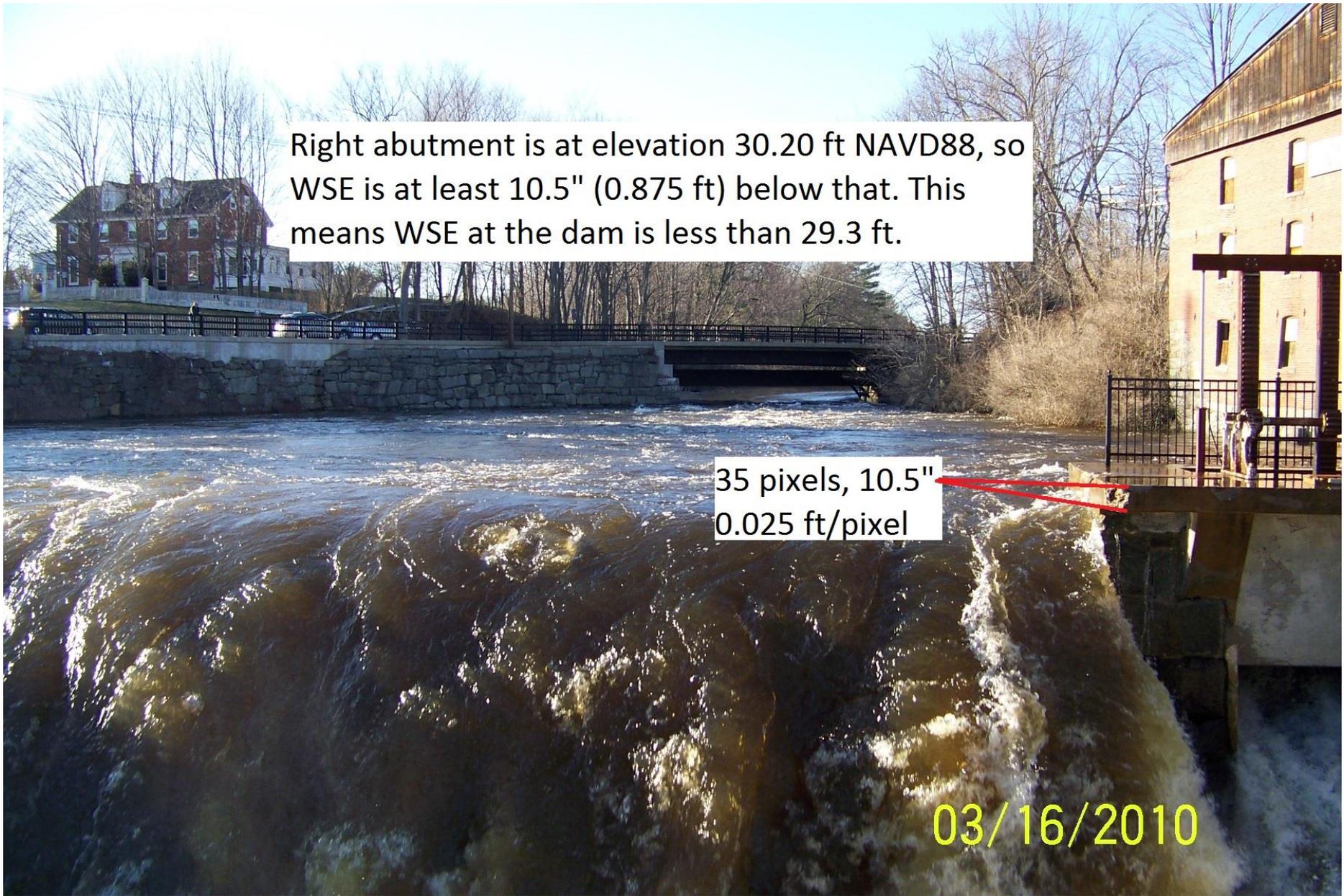


Figure G-4: Macallen Dam during the March 2010 flood, provided by NHDES. Photograph taken afternoon of March 16, 2010. Photograph used to estimate WSE at downstream side of Veteran's Bridge and at Macallen Dam.



From field data, the bottom of the concrete pad is ~28.64 ft (NAVD88), so WSE @ dam is slightly above this.

Figure G-5: Macallen Dam during the March 2010 flood, provided by NHDES. Photograph taken afternoon of March 16, 2010. Photograph used to estimate WSE at Macallen Dam.



Right abutment is at elevation 30.20 ft NAVD88, so WSE is at least 10.5" (0.875 ft) below that. This means WSE at the dam is less than 29.3 ft.

35 pixels, 10.5"
0.025 ft/pixel

03/16/2010

Figure G-6: Macallen Dam during the March 2010 flood, provided by NHDES. Photograph taken afternoon of March 16, 2010. Photograph used to estimate WSE at Macallen Dam.



Figure G-7: Downstream side of Veteran's Bridge on 3-31-2014. Photograph taken March 31, 2014 around 4:30 PM. WSE measured at dam as approximately 25.6 ft. Flow directly measured as 2,495 cfs.



Figure G-8: Upstream side of Veteran's Bridge on 3-31-2014. Photograph taken March 31, 2014 around 4:30 PM. Flow directly measured as 2,495 cfs. Photograph indicates potential slight restriction due to bridge (not measured).

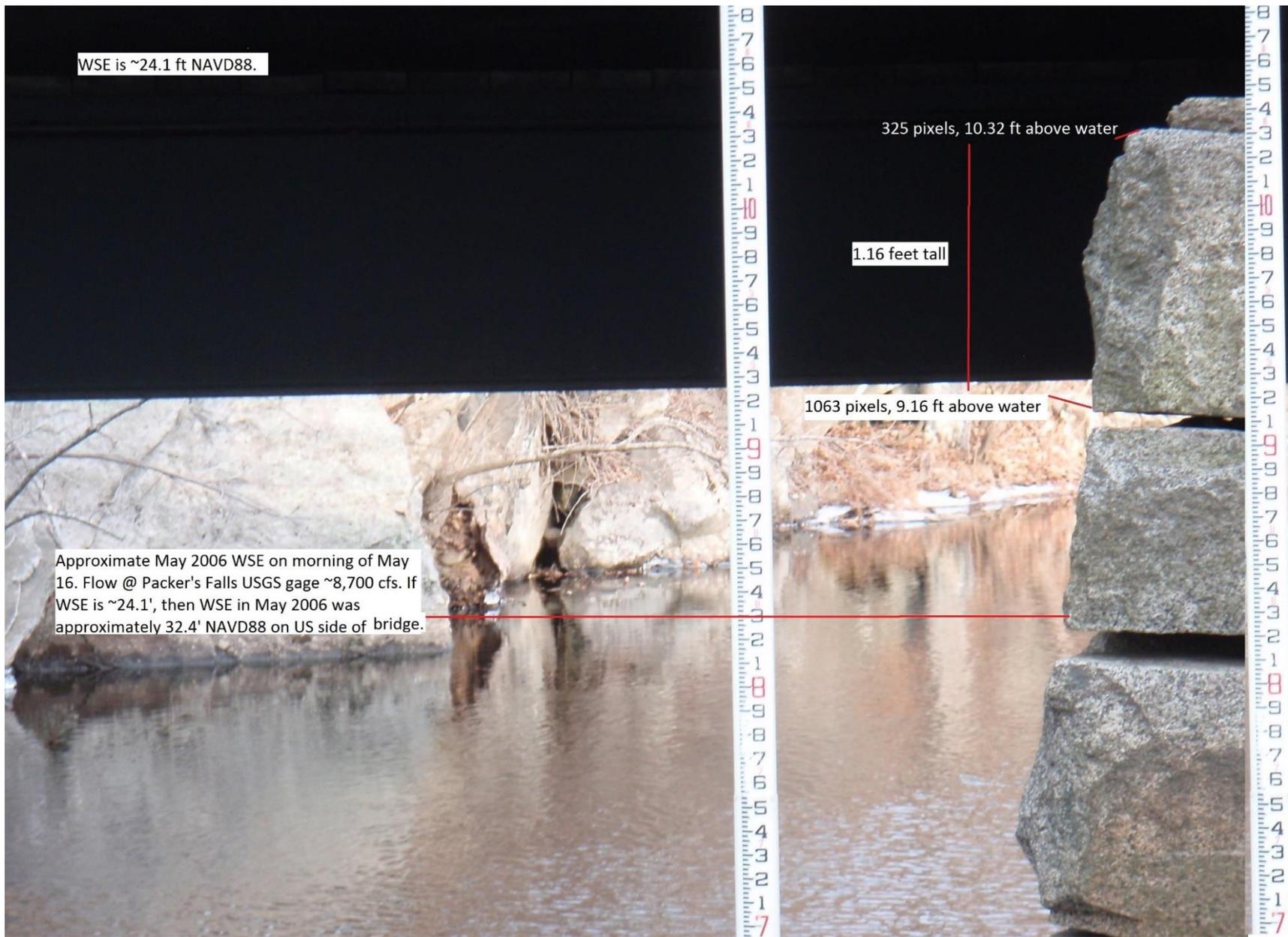
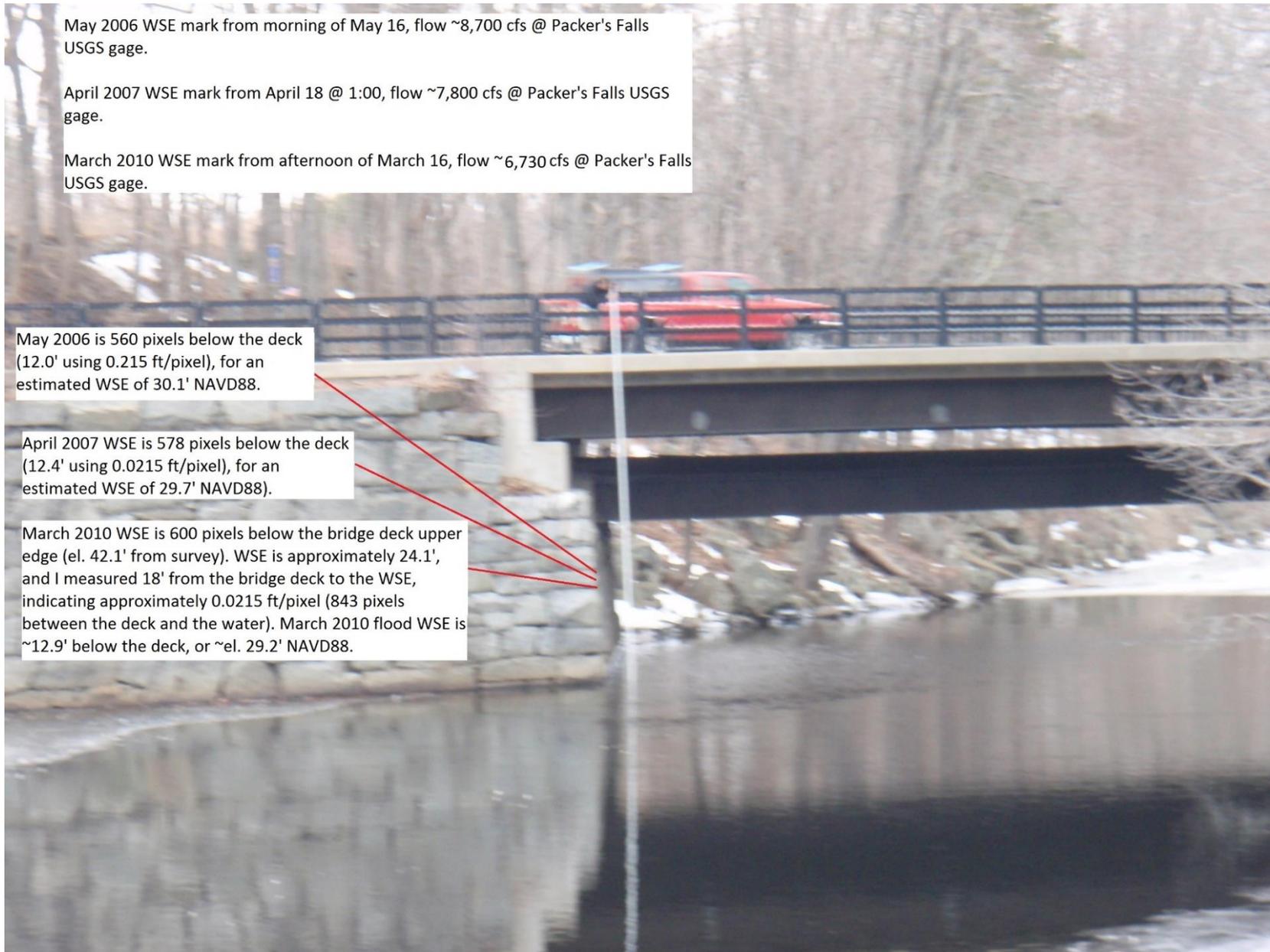


Figure G-9: Photograph taken March 27, 2014 around 5:00 PM. Survey rod was set to elevation 0 at the WSE (~24.1), with May 2006 WSE estimated on abutment based on Figure G-2.



May 2006 WSE mark from morning of May 16, flow ~8,700 cfs @ Packer's Falls USGS gage.

April 2007 WSE mark from April 18 @ 1:00, flow ~7,800 cfs @ Packer's Falls USGS gage.

March 2010 WSE mark from afternoon of March 16, flow ~6,730 cfs @ Packer's Falls USGS gage.

May 2006 is 560 pixels below the deck (12.0' using 0.215 ft/pixel), for an estimated WSE of 30.1' NAVD88.

April 2007 WSE is 578 pixels below the deck (12.4' using 0.0215 ft/pixel), for an estimated WSE of 29.7' NAVD88.

March 2010 WSE is 600 pixels below the bridge deck upper edge (el. 42.1' from survey). WSE is approximately 24.1', and I measured 18' from the bridge deck to the WSE, indicating approximately 0.0215 ft/pixel (843 pixels between the deck and the water). March 2010 flood WSE is ~12.9' below the deck, or ~el. 29.2' NAVD88.

Figure G-10: Photograph taken March 27, 2014 around 5:00 PM. Survey rod was used to measure distance from bridge deck to WSE (18.0 feet), and then used to estimate May 2006, April 2007 and March 2010 WSE on abutment based on Figures G-1, G-3 and G-4.