The idea of an Erie Railroad tunnel at Otisville lay dormant until 1906 when work finally began on the long awaited tunnel. Troubles beset the tunnel builders as they worked their way through the mountain in 1906. In August fighting broke out within the African-American crew that was digging the tunnel. The local Justice of the Peace and his constables had to be summoned to restore order. In September a blast of the explosives being used to excavate the tunnel caused the tunnel roof to collapse, killing one workman and trapping a number of others. That same month it was reported that the new tunnel was causing local water “veins” to dry up. This resulted in farmers’ wells running dry and in large amounts of water spilling into the tunnel (Skye, 2009). As inscribed on the east portal, the tunnel was completed in 1908.

The Otisville Tunnel trends WNW-ESE through Shawangunk Mountain at Deerfield Gap, a short distance north of the original Erie grade over the ridge just west of Otisville, Orange County. The elevation of the gap is ~850 ft at the east end, rising gently to ~900 ft. At the west end a mountain spur juts into the gap from the northeast, sloping off from an elevation of ~1090 ft to ~1025 ft at an imposing quartzite cliff high over the tunnel. Elevation of both portals is ~780 ft. Therefore, the eastern 0.75 mi of the tunnel is only ~100-120 ft below the floor of the gap, but under the open ridge at the west end nearly 250 ft of rock lies overhead. The tunnel is 5,314 ft long (Wikipedia, 2011). At the west portal the 1908 grade curves to the south and joins the 1847 grade ~2 mi to the southwest.

The Martinsburg Formation at the east portal of the Otisville Tunnel is spectacular exposed in cuts on both sides of the tracks leading into the portal. While generally within the open-fold Taconic frontal zone in the Otisville area, the Martinsburg at the east portal is complicated by a faulted overturned fold. The formation here consists of shale and interbedded thin-to-thick-bedded graywackes. Softer marks (grooves, flutes, and loads) are prominent on the undersurfaces of bedding in the overturned limb. Cleavage is well developed and is axial-planar to the fold. The axis of the fold trends about N10°E and is overlapped by the Shawangunk ~1.3 mi to the north. Because the Shawangunk does not appear to be folded at the unconformity, the fold, faults, and cleavage in the Martinsburg here must be Taconic in age. Outside the area of this fold, cleavage is generally not developed (Epstein and Lyttle, 1987).

The Martinsburg Formation at the west portal is ~780 ft. Therefore, the eastern 0.75 mi of the tunnel is only ~100-120 ft beneath the floor of the gap, but under the quartzite cliffs high over the tunnel. Elevation of both portals is ~1090 ft to ~1025 ft at an imposing quartzite cliff high over the tunnel. The inscription reads “1908” and “Port Jervis Line” for scale.

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