



March 14, 2013

Mr. John Ledwith
Village of Tuxedo Park
80 Lorillard Road, PO Box 31
Tuxedo Park, NY 10987

RE: 200-260 E. Lake Road Retaining Wall
FILE: 13834

Dear Mr. Ledwith:

O'Brien & Gere conducted a visual examination of a masonry retaining wall at the abovementioned address on March 13, 2013 following your request to Mr. Johan Anestad of this office. You reported that there had been a sudden loss of a stone wall block and expressed concern regarding wall stability.

The deflected wall section is approximately 220 feet long, is 8 feet high and is located about one foot away from the E. Lake road pavement. At the time of inspection, the top of the wall had rotated out of plumb about 12 inches and the upper 6 feet of the structure had shifted about one inch towards the road. The lower two feet of the wall's face was damp in numerous locations and there was significant joint mortar loss throughout. There were no weep holes or other evidence of wall drainage observed. The sloping ground (lawn surface) immediately behind the wall was depressed about two inches and there were a few small, shallow "sinkholes" therein. The Village had closed E. Lake Road to traffic.

The wall rotation and horizontal displacement clearly indicates that it has failed. The loss of the stone block indicates that the joint mortar has deteriorated sufficiently that it cannot hold individual masonry units in-place with a deformed wall geometry. It appears that wall failure is a combination of factors including the absence of drainage behind the wall and joint degradation from through-seepage which exposes the mortar to excessive freeze-thaw damage. The wall will eventually collapse with no change in loading conditions as its center of gravity shifts toward the road. There is no reasonable way to predict when the structure, or a section thereof, will fail entirely. However, a modest increase in wall loading such as from an elevated groundwater level behind the wall resulting from a long-duration or heavy rain, or by vehicular traffic behind the wall, could initiate collapse.

O'Brien & Gere recommends that:

1. The failed retaining wall section be demolished and replaced.
2. The Village of Tuxedo Park undertake whatever actions it deems necessary to protect public safety in the vicinity of the wall.
3. The new wall section should be designed by a licensed Professional Engineer in the State of New York.

Please contact the undersigned at 845-514-0283, steve.snider@obg.com, should the Village have any questions regarding this matter.

Very truly yours,
O'Brien & Gere Engineers, Inc.

A handwritten signature in black ink that reads "Steven H. Snider".

Steven H. Snider, PE
Project Manager

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Cc: RR Bowers, OBG
AJ Anestad, OBG