

James:

Per our previous discussions and discussion on site, it is my opinion that the older (limestone and block) portion of retaining wall at the west side of the 345 Maple property should be evaluated and repaired under the direction of a qualified professional engineer. The wall shows numerous signs of distress and may be beyond a simple tuck pointing repair, though if the wall is repaired as is some tuck pointing and mortar repair may also be required. An alternative to an engineered assessment and solution would be complete removal and replacement by a qualified contractor. Though this option may be difficult due to the location of the wall.

The portion of the wall that needs to be addressed appears to be constructed close to 3' of limestone with a further four courses of CMU of an unknown date. There is a portion of the wall that appears newer constructed of CMU that appears to be in good condition. However, some portion of this new CMU may need to be removed/repared, depending on the process of repairing the older portion of the wall. This wall retains soil that slopes up, at close to a 1 to 1 incline, to the principal structure on the property. This structure is approximately 15'-20' back from the retaining wall.

There are a number of issues with this retaining wall which indicate it could pose a danger of collapse, though it is hard to speculate on timing of such an event. The wall is not on a public right of way, however, it does abut the driveway of the neighboring property. The forces imposed on this wall are increased due to the slope of the soil behind the wall and possible surcharge on the wall from the principal structure on the property. From our visual inspection here are the issues that I see in this wall:

- 1) The top of the wall has deflected considerably, estimated at approximately 6". Though the wall is still standing and retaining the soil behind, this excessive deflection could already be termed a failure of the wall.
- 2) At the interface between the limestone and CMU there is a projection of approximately 2" along a horizontal line in the wall. This would indicate a shear failure of the joint between the limestone and CMU courses added above.
- 3) The original limestone portion of the wall shows significant deterioration.

It is possible there are a number of repair options or the wall could be stabilized in place, however, these fall outside of any prescriptive design and require the direction of a Professional Engineer. It is also possible the wall could be further assessed and determined to be stable as it is in place or a monitoring program put in place, though again this would need to be done under the direction of a professional engineer. As I mentioned above the wall could be removed and replaced, but this may prove difficult due to its location to adjacent property, the soil slope above, and location of the principal structure of the property.

Please let me know if you have any questions or need further clarification.



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