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BROKEN ARROW

## To: Kenneth Schwab, PE, CFM, Assistant City Manager

From: Alex Mills, PE, CFM, Director of Engineering and Construction
Date: 07/03/19

## RE: Hillside Drive Retaining Wall - Update

Mr. Schwab,
The Engineering \& Construction (E\&C) Department, with the help of the design structural engineer of record (SER), have investigated the issues with the Hillside Drive Retaining Wall. It is the opinion of the SER that the wall is failing in sliding. With the absence of a detailed investigation, it is difficult to determine if the SER is correct. There may be global stability issues associated with the wall in addition to sliding issues. However, it is evident the wall must be replaced. The wall can be demolished and rebuilt with the current block and new geogrid, backfill and proper drainage, or it can be replaced with a new type of retaining wall such as a cantilevered, concrete, retaining wall (CCRW). Please refer to the attached letter from the SER for a complete description of his findings.

You met with key members of E\&C met on 6/19/19 to discuss the wall. Those in attendance, were all in agreement that the best solution would be to demolish the existing wall and rebuild with a CCRW. E\&C has asked Wallace Engineering Structural Consultants, Inc. (Wallace) to provide a proposal to design a CCRW to replace the existing wall. In addition, Wallace has been asked to improve upon the current drainage design (possibly a chimney drain), specify a granular backfill, and include a hydrostatic differential in their calculations. Wallace will also provide a cost estimate for the new wall. Although this will not be the least expensive option to remediate the wall, it will be the best structural solution to preclude future problems.

With your approval, E\&C will proceed in that direction. Please let me know if you need further details.

Regards,


Alex Mills, P.E.
Director of Engineering \& Construction

