

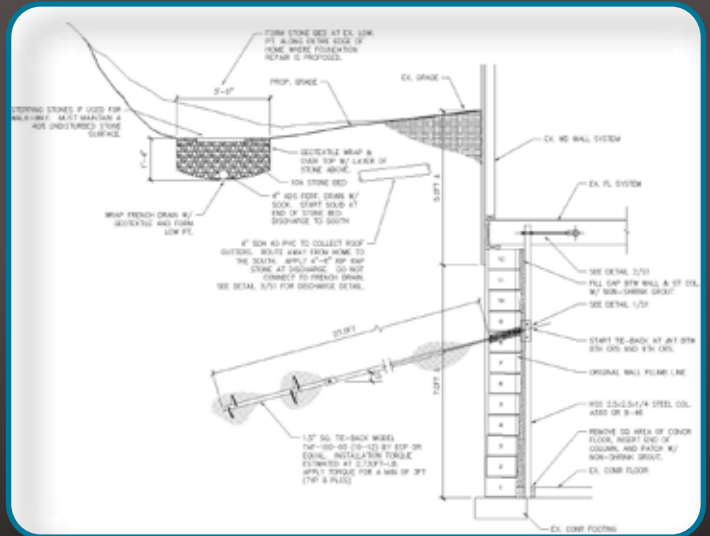
Machin Engineering is a full service civil and structural engineering firm serving the private and public markets throughout Michigan.

Project Profile Bowed Masonry Wall Repair

Machin Engineering was retained by the home owner to provide structural engineering review and design services of a bowed foundation wall. We reviewed the existing conditions of the foundation, determined the correct course of action, designed a repair, and assisted the procurement of a qualified contractor.

The failure was attributed to the excess backfill depth against the foundation. A wall of this type normally has a depth of around 7 feet. This foundation had 12 feet. We customized the design to support the wall at the failure plane as well as the main floor. The design consists of eight helical tie-backs, steel columns, and floor joist thrust restraints.

The tie-backs were installed from the interior using standard equipment and methods. After the tie-backs were installed, the contractor completed the installation of the steel columns and floor thrust restraint components.



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