Finite element analysis of bridge steel pedestal anchor bolts in reinforced concrete[1] B. LOGAN HANCOCK, Angelo State University Department of Physics, MONIQUE HITE HEAD, Texas A&M University Department of Civil Engineering — Steel pedestals are short, column-like structures currently being used to elevate highway bridges to reduce the risk of collisions with over-height vehicles. Previous full-scale experimental research has been done to examine the efficacy of these steel pedestals and their components under quasi-static loading to evaluate any added instability in the event of an earthquake. As part of the Undergraduate Summer Research Grant (USRG) program at Texas A&M University, this specific project was focused on observing the behavior of the post-installed steel pedestal anchor bolts under applied shear and tensile loading using the finite element (FE) software Abaqus. The results from some of the preliminary analyses are compared to theoretical anchorage calculations with the aim of producing a benchmark for future steel pedestal anchor bolt embedment design. Future research improvements regarding FE modeling and structural design suggestions are proposed as well.

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