Executive Summary

A summary and detailed description of the structural system for the building "Northside Piers" is presented within this report. The building is a 29-story condominium tower located in Brooklyn, New York. Its gravity loads and seismic loads were found using the New York City code and a couple of other loads were identified. The lateral load was found using a wind tunnel test. It was determined that wind was the controlling mechanism for lateral loads in the building with a base shear of 1,140 kips in the East-West direction.

The concrete structural system consists of a pile foundation with grade beams, two-way flat plate slabs, a few beams, perimeter columns, and concrete shear walls. The shear walls create a central core around the elevator shaft and stairs. An additional wall comes off of the core in the direction that is weakened by doorway penetrations.

Spot checks were performed using the calculated loads for the slab system, a column, and the shear wall system. All of the members checked were strong enough for the given loading. There was, however, additional capacity calculated for the column, but this may be due to the fact that the lateral force was assumed to be taken entirely by the shear walls.