



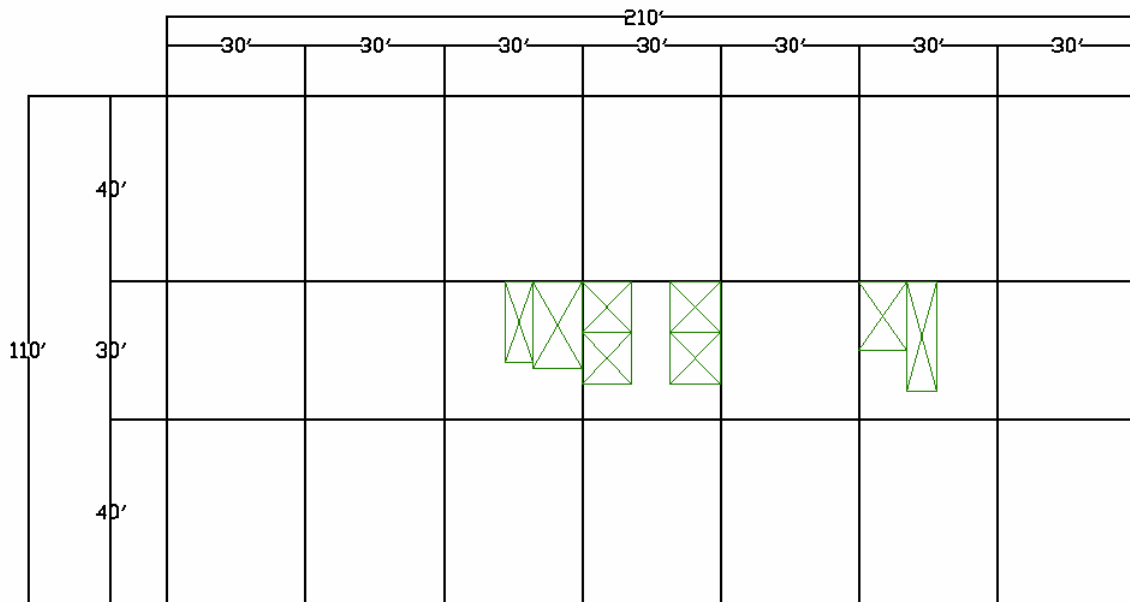
Towers Crescent Building B
Mike Synnott
Structural
Advisor - Parfitt



Final Presentation

Existing Structure

Building B is a 9 story, 200,000 square foot building with an average story height of 13'-4". The exterior façade is composed of mainly glass and brick, with aluminum and copper aspects as well. The footprint of the building is basically rectangular, measuring 210' x 110'. Two typical bay sizes, 40' x 30' and 30' x 30' make up a typical floor, shown below.



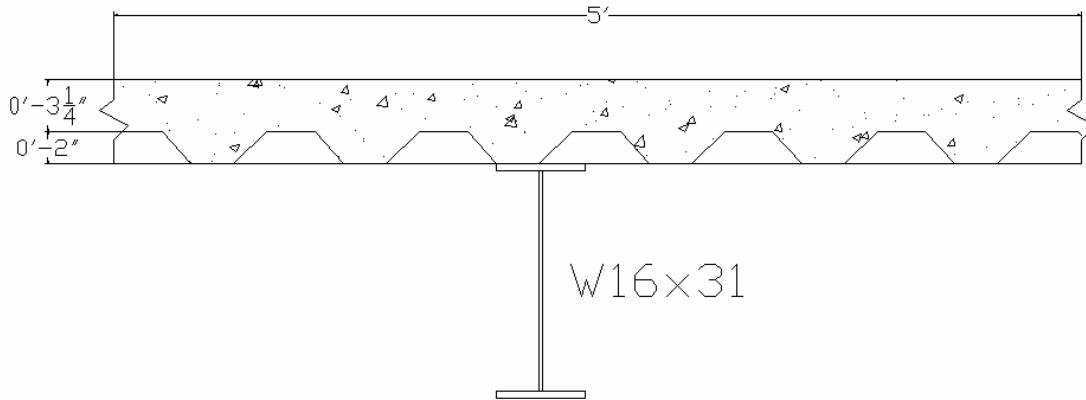
The entire building is a steel composite structure, with a 5.5" concrete slab, including 2" metal decking and shear studs to transfer the load between concrete and steel. The 4th through 7th floors of Building B are considered to be typical floors, with the 8th floor similar, but with a few differences in beam selection, and the 2nd and 9th floors differing in floor plan and story height, respectively. A section of the steel composite floor for one beam is shown below.



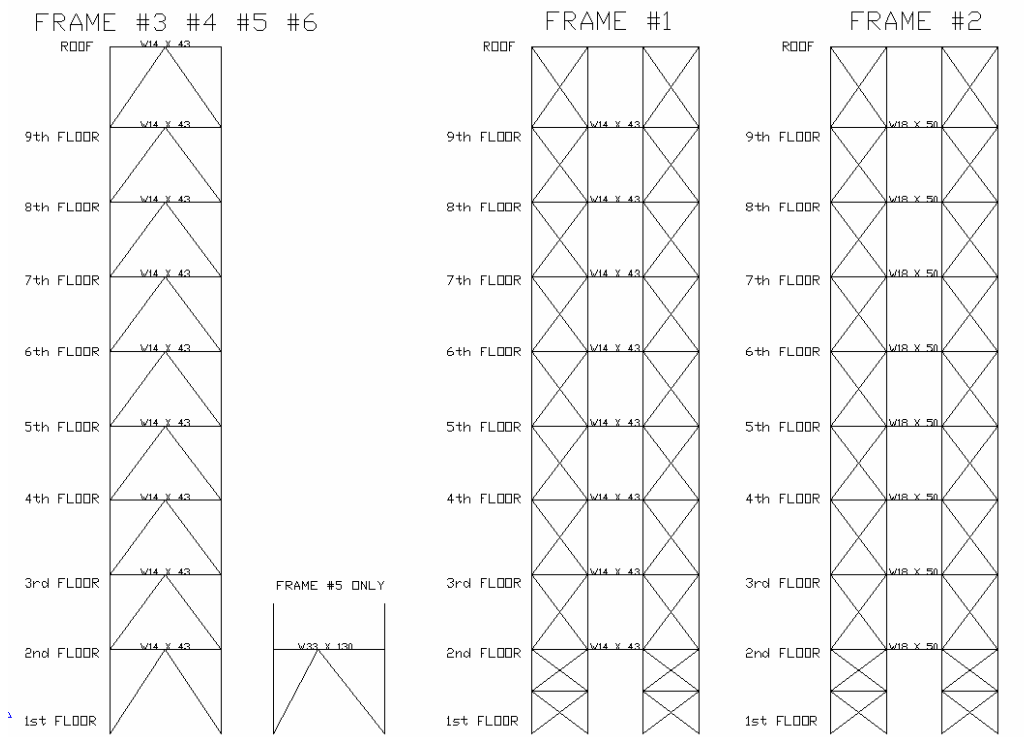
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Steel braced frames are in place to resist the lateral forces on the building, four in the north/south direction and two in the east/west. These walls provide a great deal of deflection resistance, limiting the entire building to just 1.6" drift, which is less than half the allowable drift of 3.68". The braced frames on the building are shown below. Frames #1 and #2 resist in the east/west direction and frames #3 - #6 resist in the north/south direction.





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Three floors of parking garage are located below the first floor of Building B. Concrete flat slab with drop panels is used for each floor of the garage. The slab is 9" deep with #5 @ 12" on center. The drop panels are 5.25" deep and span 1/6th the total span from column to column in all directions. The foundation is comprised of mini-piles and piles with pile caps located at each column. The basic foundation plan is shown below.

