

Field Report

Project: Park Danforth Renovations and Additions
Project #: 3422
Date/Time: 12/30/15 – 5:00 PM
Participants Dan Burne, P.E.

On December 30, 2015 at approximately 1:00 PM, I received a call from Project Superintendent Kemp Carey (PC) stating that columns F8 and G8 had tipped over during erection. I arrived on site at approximately 5:00 PM and met with Kemp Carey (PC) and Dave Davis (Davis Erectors). At the time of my arrival the effected steel members had been disassembled and laid down.

While on site I was told that the steel plate washers for the columns had not been shipped by the fabricator. These washers are 2" and 3" (either diameter or square) and are ¼" and ½" thick respectively. These washers had been the topic of recent emails and discussions with the fabricator as they had alerted BSE and PC to several conflicts between the plate washers and mislocated anchor rods. BSE and PC were awaiting clarification on the conflicts and proposed corrections when the fabricator shipped the steel without resolving the conflicts. BSE and PC have not yet received this information.

Without the specified plate washers, much thinner standard washers were reportedly procured elsewhere and used above leveling nuts and below anchor rod nuts. At the time of my visit, the column tipping was thought to be initiated at column G8, which is a shear lug location utilizing leveling nuts (versus leveling plates used at non-shear lug locations). The column base plate was supported on the leveling nuts and washers only. Shim stacks or wedges had not been installed below base plate. It was discussed that this column likely settled over the washers pushing the washers through the base plate holes and was able to tip as the same washers could pull through the base plate holes as it began to rotate. The neighboring column at F8 could be pulled with it for the same reason, allowing the washers to be pulled through the base plate holes.

As the crane was still attached, we were informed that the steel could be laid down relatively gently without much damage to the structural steel. Steel damage was observed at various beam to column clip angles. Not all steel was inspected due to the position in the steel pile. Damage to the anchor bolt groups was observed at both column locations in the form of bent and broken anchor bolts. No damage to the foundation was observed and we have requested the GC review further after removal of snow, etc. While on site we requested that any columns still supported by leveling nuts and thin washers be shimmed with steel shims and that all top washers be replaced systematically with the specified plate washers. We issued anchor bolt repairs on 1/4/16.



Anchor Group at Column F8



Anchor Group at Column G8