Report on Howell Cheney Technical High School

Concrete Inspection

Date: June 27, 2023

Time: 12:00 pm

Location: 791 Middle Turnpike West, Manchester, CT 06040

This report is to be considered a material part of *A Study Undertaken by Connecticut Foundation Solutions Indemnity Company, Inc. ("CFSIC"): Public Use Building Foundations and Manifestations of the Existence of Pyrrhotite* published on December 21, 2022. It is in addition to that report and not a stand-alone evaluation undertaken for any other purpose.

Upon arrival at the school building, I was met by two individuals responsible for the maintenance of this facility. While the original structure was built in 1961, additions to the school took place between 2007 and 2009, the concrete in question was in the area of the newer additions. Our visual examination included not only the suspect area, but also the HVAC training building located behind the original structure which was built during the same period 2007 to 2009.

At first glance the horizontal cracking and surface spalling could resemble the appearance of pyrrhotite laden concrete from that period, yet the damaged area was isolated to the short section of the wall in contact with the sidewalk, an area exposed to constant deicing chemicals over the past 14 years. The remainder of the three-sided addition showed no signs of concrete surface defects outside the normal hardened shrinkage cracks which were very small and infrequent.

The addition on the rear of the main structure included a tall retaining wall which had minor crazing of the parging and free of any large cracks transmitting through the cosmetic surface treatment. Overall, the condition of the exposed concrete was in satisfactory condition, and it is apparent that good concrete placement techniques were used during construction of the additions.

Based on my evaluation and assessment, nothing I observed or evaluated would enable me to assign a CFSIC-related severity class coding. In the absence of definitive map cracking, efflorescence and staining it would be prudent to schedule the extraction of core samples for petrographic analysis because of the building's use as a public structure. Although we believe the cause of the suspicious cracking and spalling is associated with the application of

deicing chemicals, third-party negative test results for pyrrhotite would be valuable information for the continued use of the building.

After careful examination of the school building and reviewing notes and photographs my professional opinion is the defective area is limited to the exposed concrete surface that received the highest concentration of deicers due to the location of the everyday pedestrian concentration on the campus. In areas adjacent to the questionable cracking and spalling the concrete appears to be normal, sound, and free from surface defects. The recommendation for the extraction and testing of concrete core samples is not solely for the presence of pyrrhotite, the petrographic analysis could also be beneficial to determine the in-place strength and provide a sense of security for the remaining years the structure will be in service.

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