

Middle School Site-Testing Report Re: 204 February 12, 2025

Our sub-consultant, Seaboard, was on site on 2/10/25 to complete the soil borings in an effort to establish approximate bedrock elevations adjacent to the northeastern foundation wall of building at 204 Mistuxet Avenue in Mystic. Previous efforts to determine the bearing condition of the foundation wall with test pits did not reveal an actual bottom of footing elevation or a bedrock elevation due to high ground water and deeper than expected bedrock.

In total, 8 borings were attempted along this corner of the building as indicated in the attached map. They ranged from approximately 6 feet to 27 feet from the face of the building. Several of the borings were met with early refusal (anywhere from 2.5 to 5 feet below finished grade) and are believed to be either large boulders or fractured bedrock. Three of the borings were completed to depths of 8, 9, and 15 feet respectively. Based on the feedback the driller received from the auger while conducting these borings, it is believed that each of these reached the native bedrock elevation. This would put bedrock anywhere between 1 and 3 feet below the likely bottom of footing elevation in the area of the foundation wall with the cracks and that the foundation wall is very likely NOT pinned to the bedrock in this location as indicated on the original design drawings.

Based on this data, we believe it's likely that fluctuating hydrostatic pressure due to the groundwater is causing the movement in the foundation wall that results in the cracks opening and closing in a cyclical nature. Ground water monitoring wells were installed in the completed borings and they will be measured/observed monthly moving forward to correlate ground water elevation with readings we're observing on the several crack monitors installed throughout the area.

Our next steps include reviewing all the data we've collected to date along with the next few months of crack monitor and ground water monitor readings to finalize our remaining useful life study as well as working with our geotechnical contractors to estimate a range of repair costs to address the condition. At this time, it isn't certain what the recommended repairs would consist of or how effective they would be in eliminating the issue; however, we are confident any attempt to stop further movement of the wall will be costly. Based on the data we've collected to date and the results of the borings, we do not believe that the continued movement of the foundation wall and footings will result in catastrophic failure of the building; however, there will continue to be long term maintenance and localized reconstruction efforts for as long as the movement continues.

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