

L LAURO ENGINEERING

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08/31/2007

City of Portsmouth
Office of the Mayor
Att: James D. Kalb, Mayor
728 Second Street
Portsmouth, OH

Dear Mayor Kalb:

I revisited the Portsmouth Spartan Stadium visitor side bleachers on Thursday August 30, 2007. My first visit/inspection was made last fall with Public Service Director Chris Murphy. At that time, I requested Chris to expose one footer under block wall previously placed under center of one of the stair sections. Repair supports (8" block wall) were built under all four of the steps accessing the bleachers, 12 feet from back wall. In addition, 8" block walls were built under the top landings for additional support to the four stair sections.

The step sections were originally built without any mid section support. Step assembly consists of (15) 9" rise, 24" tread and 54" wide steps. Each set of steps was built beside the two end wall frames and beside two intermediate frames. Three of the steps have center swag from 1/2" to 3/4". There is no indication of swag on the river end set of steps. There is no indication of movement since the intermediate supports were installed (estimated time around 1990). The vertical mortar joints are still tight against frame supports.

The space between steps and frames is not movement. I believe these were the result of expansion material when built, deteriorating and has long since fallen out. You can see the same one inch gap in the back wall. All the visible gaps have square smooth inside edges.

It is my opinion that the original swag resulted in insufficient reinforcing in the steps to span the original 28 foot length. Installation of the center support walls changed the span (12-14 feet) load capacity by several hundred percent.

The 32" high top cap with (8) light post has several damage areas exposing two conduit runs installed for lighting. Design code for concrete cover of any steel has always been 2". The conduit, when installed, was close to the surface resulting in concrete failure due to weather and seasonal temperature difference. When the conduit passed thru the expansion joints, it appears there were no provisions for pipe expansion.

There is also an area at the river end in the 32" high wall cap where two rebar are exposed (6" high spaced 16") due to improper installation.

At ground level in the center area, one frame has a piece of concrete chipped out due to a piece of wood being in the concrete pour.

The river end wall at ground level is showing weather deterioration. This is a repairable damage. The cracked concrete on three of the step assemblies, other than speculative appearance, does not create a life safety issue. I would suggest the cracked areas be repaired with a good epoxy grout leaving the expansion joint material on the top side to protect from weather damage.

As a state certified building official, CBO and a licensed Ohio Professional Engineer, I could not condemn this structure.

Respectfully,

 Tony Lauro (Anthony Lauro P.E.)

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